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Assessment of Burning Characteristics
of Aircraft Interior Materials

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Assessment of Burning Characteristics
of Aircraft Interior Materials

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NOTICE

These tests were performed under controlled laboratory conditions and the results should not be arbitrarily extrapolated to other test conditions or full-scale fire scenarios. It should be understood that the toxicity of smoke is not an inherent property of a material, but can be highly dependent on the fire test conditions.

Acknowledgments

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SUMMARY

A room-size calorimeter was used to quantify the heat and smoke release characteristics of composite aircraft seat cushions. The 729 ft³ chamber was instrumented to monitor the rate of heat release, cumulative energy release, rate of weight loss, and evolution of visible smoke and fire gases.

Eight "advanced" design seats and five commercial airlines salvage seats were tested under conditions of high radiant heat flux ignition. All of the advanced materials showed substantially lower heat and energy release characteristics than the commercial salvage seats, and lower evolution of smoke.

Of the advanced materials, Seats 6, 7 and 8 (polyimide foam cushions) had the lower rates of heat release and total energy release. Seat 7 was the lowest of all the cushion composites in terms of visible smoke and carbon monoxide evolution.

An assessment of the toxic gas evolution of the eight advanced materials indicated that none of the specimens evolved a high enough concentration of toxic gases under these test conditions to permit differentiation among the specimens. This is not to suggest that these materials could not produce significant toxic insults under other test scenarios or actual fire conditions. A recommendation for future studies includes a proposal for more extensive comparative studies using the room calorimeter.

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I. INTRODUCTION

A. Definitions

The following definitions (from ANSI/ASTM E176-80) are pertinent to this report:

- a) smoke - the airborne solid and liquid particulates and gases evolved when a material undergoes pyrolysis or combustion;
- b) fire gases - the airborne products emitted by a material undergoing pyrolysis or combustion, which at the relevant temperature exist in the gas phase;
- c) combustion - any chemical process that produces light and heat either as glow or flames;*
- d) pyrolysis - irreversible chemical decomposition caused by heat, usually without oxidation;
- e) smoldering - combustion of a solid without flame, often evidenced by visible smoke.

B. Scope of Work

The primary objective of this study was to compare the performance of a series of seat cushion composites (Table I), consisting of upholstery, fire blocking (in some cases), cushion reinforcement and cushion. Most of these composites represent "advanced" designs for future aircraft fire safety needs. A preliminary series of tests was performed on commercial airlines salvage seats, as a baseline for comparison with the more advanced materials.

The primary result of these tests was a comparison of the heat release of these specimens induced by ignition at high heat flux. Both the "rate of heat release" and the "cumulative energy" were determined as functions of time. Fire gas release (carbon monoxide, carbon dioxide,

* A proposed revision of this definition within ASTM presently is worded, "a chemical process of oxidation that occurs at a rate fast enough to produce heat and usually light either as a glow or flame."

TABLE I
SEAT DESIGN TEST CONFIGURATION

Test No.	Upholstery	Fire Blocking	Cushion Reinforcement (Adhesive R2382 N/F)	Cushion	Remarks
1	ST4727-112 Sun Eclipse Wool/Nylon (104)	None	Cotton Muslin 44/40 Cnt (228)	2043FA Urethane	Baseline
2	ST4727-112 Sun Eclipse Wool/Nylon (104)	400-11 Durette Batt (216)	Nomex III (221)	2043FA Urethane	Fire Barrier
3	ST4727-112 Sun Eclipse Wool/Nylon (104)	Vonar 3/PS (229)	Cotton Muslin 44/40 Cnt (228)	2043FA Urethane	Fire Barrier
4	20787 Kermel/Wool Blend (101)	Nomex III (221) 1/2 in. LS-200 Neoprene (317)	None	2043FA Urethane Foam with Airex (414) Core	Fire Barrier and Flotation
5	20787 Kermel/Wool Blend (101)	Nomex III (221) 1/2 in. LS-200 Neoprene (317)	None	2043FA Urethane	Fire Barrier
6	20787 Kermel/Wool Blend (101)	None	Nomex III (221)	1/2 in. LS-200/ Polyimide Foam	Lightweight Combined Cushion
7	Sedellia Blue 3177 100% Wool (117)	None	Cotton Muslin 44/40 Cnt (228)	Polyimide Foam	Fire-Retardant Cushion
8	Sedellia Blue 3177 100% Wool (117)	None	Cotton Muslin 44/40 Cnt (228)	Polyimide Foam w/ Airex (414) Core	Fire-Retardant Cushion with Flotation

TABLE IA

SEAT TEST CONFIGURATIONS
COMMERCIAL AIRLINES SALVAGE SEATS¹

<u>Test Number²</u>	<u>Number of Seats</u>	<u>Spacing Between Seats</u>	<u>Remarks</u>
9	2	3 in.	Same Set-Up as Nos. 1 through 8
10W-1	3	1-ft table be- tween 1st & 2nd	Full Triple Seat as Received
10W-2	3	3 in.	Analog Seat Mock-Up
10W-3	3	3 in.	Same as 10W-2
5W	3	3 in.	5 Watts/cm ²

- Notes: 1. Test 9 was performed along with Tests 1 through 8, others were part of the preliminary series of tests.
2. Tests 9, 10W-1, 10W-2, and 10W-3 run at nominal 10W/cm² heat flux, Test 5W run at nominal 5 W/cm².

and hydrocarbons), oxygen consumption and visible smoke evolution were determined over the course of the experiment.

The experimental design included animal exposure in order to provide a toxicological assessment of the smoke. This assessment was planned as a significant parameter in the seat cushion evaluations; however, experimental constraints precluded making meaningful comparisons of the materials. Relative toxicological hazards of the materials will be discussed, based on the animal experiments and the analysis of combustion gases. A proposal for a more comprehensive assessment of the toxicological effects of smoke is also presented in this report.

Two additional seat cushions (duplicates of ones already tested) were received too late to be included in this study. In the interest of the overall objectives of this program, these seats will be run under the same test conditions as the others in order to provide additional information on Seat No. 3, which was incompletely evaluated in the first series, and on the repeatability of the technique. These additional tests will be reported in an "addendum" to the present report.

C. Principles of Heat Release Calorimetry and Assessment of Fire Hazard

Generally, ignitability, flame spread, heat release, and release of smoke (including toxic gases) are thought to comprise the overall fire hazard of a material. When ignitability and flame spread under usual test conditions are good (i.e., low), such as with these advanced seat compositions, heat and smoke release become more significant parameters. Under high heat flux, the release of heat by any one material (e.g., a seat cushion) may determine whether or not neighboring materials (walls, carpeting or adjoining seats) ignite and propagate the flame. The rate

of heat release and the total energy released by materials under controlled fire conditions may be the most important criteria in a fire hazard analysis of modern, fire-resistant materials.

An additional advantage to heat release measurement is in the quantitation of fire hazard analysis. Photographic documentation of the spread of flame in a full-scale test is spectacular, but often not of much use in the scientific pursuit of safer materials. Also, the complex data from full-scale tests are difficult to interpret and must be preceded by carefully controlled smaller-scale experiments.

Laboratory scale tests suffer from size and shape limitations that prevent testing composite materials as they exist in a real environment. The Southwest Research Institute room calorimeter permits testing of full-size configurations in a medium-scale experimental set-up. Since the release of heat and smoke are not inherent properties of a material, but are dependent on the mode of combustion, it is critical to test materials under controlled conditions.

Heat release in any calorimeter is calculated from the measured temperature rise of a heat sink (usually air or water) within the calorimeter. For a static heat sink (e.g., a laboratory "bomb" calorimeter), the total heat released, Q , is proportional to the temperature rise, ΔT , of the heat sink,

$$Q = k_s \Delta T.$$

For a flowing heat sink (e.g., the room calorimeter), it is the rate of heat release, \dot{Q} , that is proportional to the temperature rise of the heat sink (air),

$$\dot{Q} = k_f \Delta T.$$

The total heat released is the integral of the heat release rate over time. The proportionality constant k_f contains the heat capacity of the heat sink (air), the mass flow rate of the heat sink, and systematic heat losses of the calorimeter (e.g., through the walls).

Fitzgerald (Reference 1) has described this concept more thoroughly and traces the development of the more complex relationship between heat release rate and the actual measured temperatures in the room calorimeter.

II. EXPERIMENTAL WORK

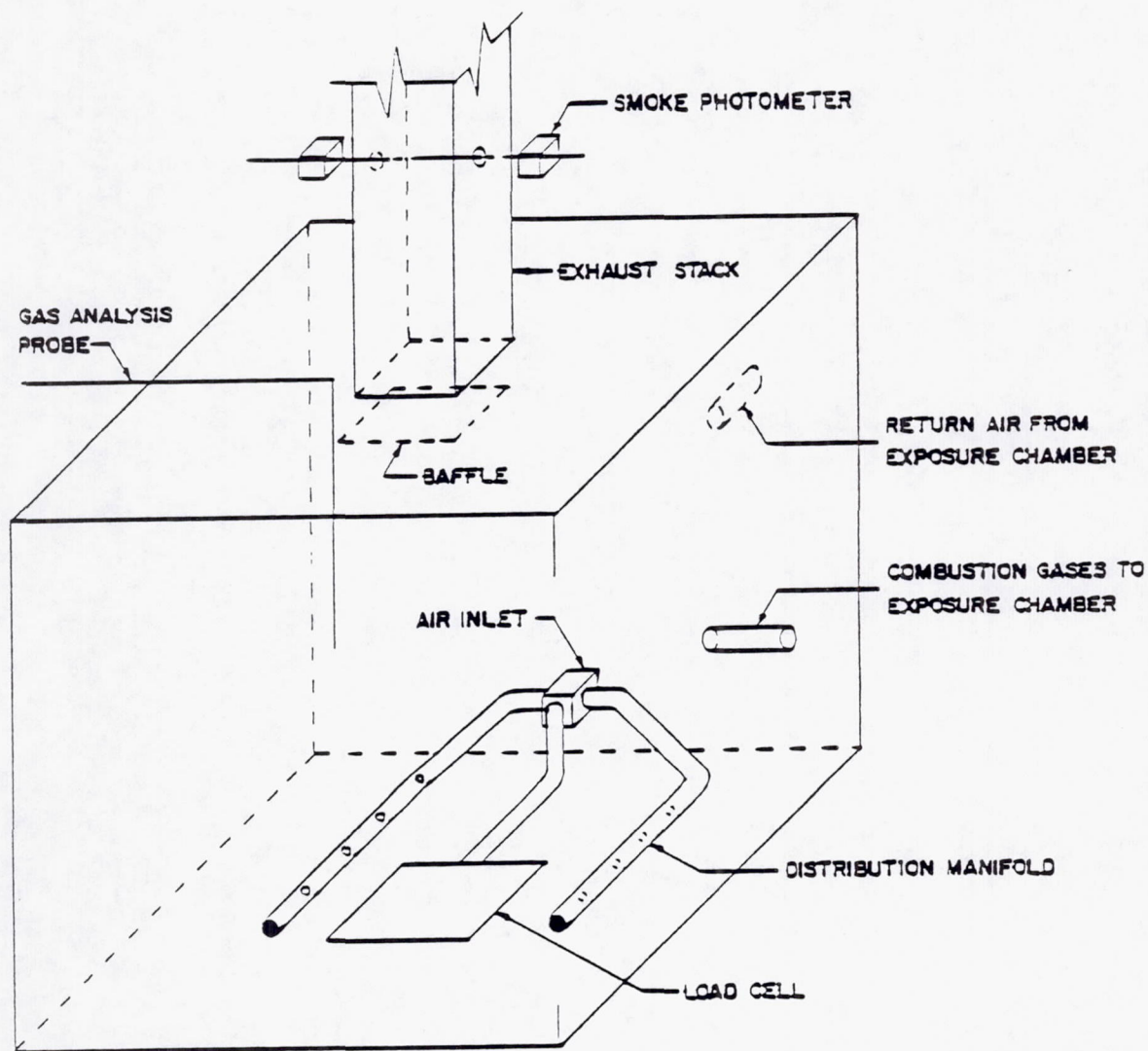
A. Description of Calorimeter

The Southwest Research Institute "room calorimeter" is pictured schematically in Figure 1. Its construction and operation are described below.

The room calorimeter was a 9 x 9 x 9-ft chamber (729 ft³) constructed of 1/2-in. Marinite[®] on wood studs. An air flow of 550 cfm was distributed across the floor of the room and exited through a 12-in. square exhaust stack in the center of the ceiling. Below the exhaust stack entrance was a distribution baffle. A load cell in the floor of the room provided constant measurement of the weight of the specimen.

Chromel-Alumel thermocouples were built into the walls, at the surface of the Marinite[®], at heights of 6 in., 3 ft, 6 ft, and 8 ft 9 in. (three thermocouples per wall at each height); and in the ceiling 3 in. and 3 ft away from the walls. Thermocouples were also built into the stack, above the baffle, and into the room airspace. The thermocouples at the same relative location (e.g., all thermocouples in the walls at 3 in. from the floor) were tied together in a parallel arrangement in order to give a single, "average" output. In all, more than 70 thermocouples were located in the room.

Provision was made for the measurement of smoke density and fire gas concentration and examination of the toxicological effects of the combustion products. Smoke density was measured continuously using a photometer located in the exhaust stack (12 in. effective path length). Fire gases were sampled through a stainless steel probe located over the seats at a 5-ft height above the floor. Gas sampling was intermittent in order to provide analysis of both the room atmosphere and that of the



Room Dimensions = 9 x 9 x 9 ft (729 ft³)

Air Flow = 550 cfm

Flow Rate to Exposure Chamber = 8 cfm

Thermocouples: Walls (6 in., 3 ft, 6 ft, 9 ft from floor)
 Ceiling (3 in., 3 ft from walls)
 Baffle
 Stack

Figure 1. Southwest Research Institute Room Calorimeter

animal chamber. Sampling was controlled by a timed switching valve.

A sample of the combustion atmosphere was continuously circulated through an animal chamber in order to measure toxicological effects. The flow rate was 8 cfm through a 2-in. diameter pipe into a 300 l acrylic chamber containing rats in either a rotorod apparatus (Figure 2) or a leg-flexion incapacitation set-up (Figure 3).

Radiant heat was supplied by a quartz lamp radiant panel of special design (Figure 4). The panel permitted irradiation of the entire seat from the front. The arrangement of the radiant panel, the seat cushions on a solid metal "analog" frame, and the load cell are also shown schematically in the figure. A small propane igniter was located near the intersection of the back and bottom cushions (not in contact with the seats). The distribution of radiant heat flux over the surface of the seat (Figure 5) was not even; however, it was reproducible and was the best of several arrangements tried. For a nominal 10 W/cm^2 heat flux, the range was $3.1 - 9.9 \text{ W/cm}^2$.

B. Calibration

Calibration of the room calorimeter for heat release measurements was performed by means of a ribbon burner and propane/air mixture. The propane and air were delivered through a venturi, and the air adjusted to produce a clean-burning flame.

The known rates of heat release of the propane (from the several propane flow rates and heat of combustion), were used to develop a multiple linear equation where Y was the rate of heat release and the X's were cumulative thermocouple responses (see Appendix B for more details). A regression analysis on all of the calibration data at

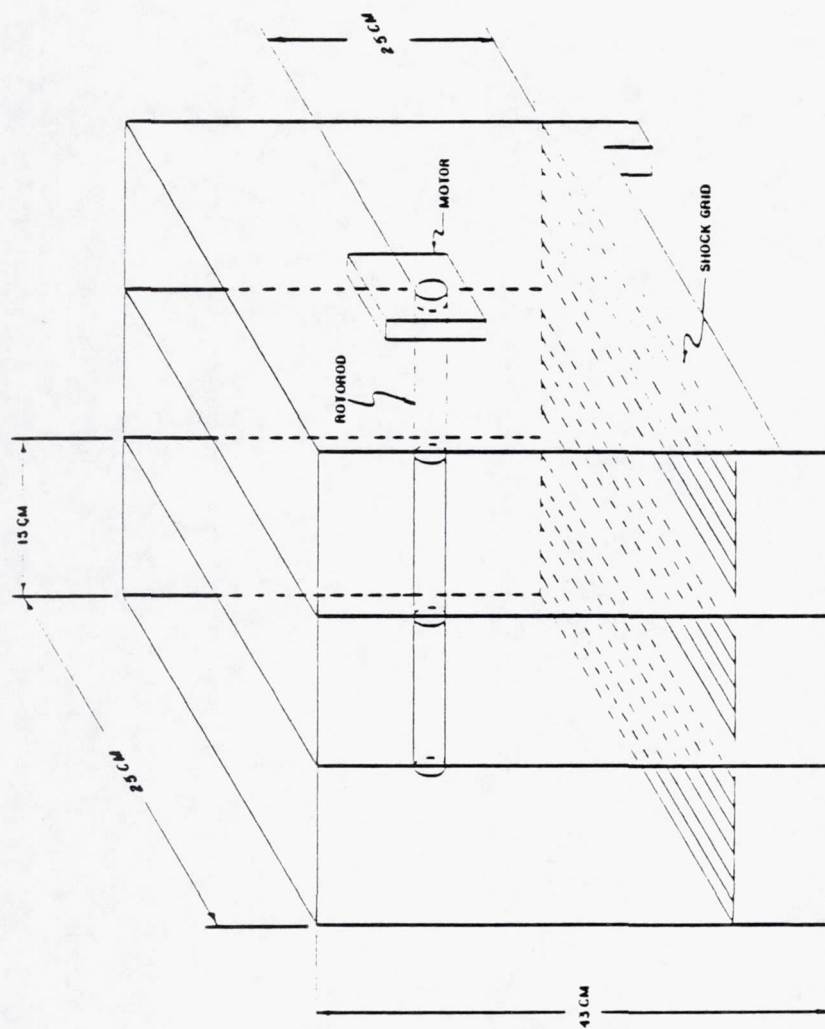


Figure 2. Rotorod Apparatus for Measurement of Incapacitation

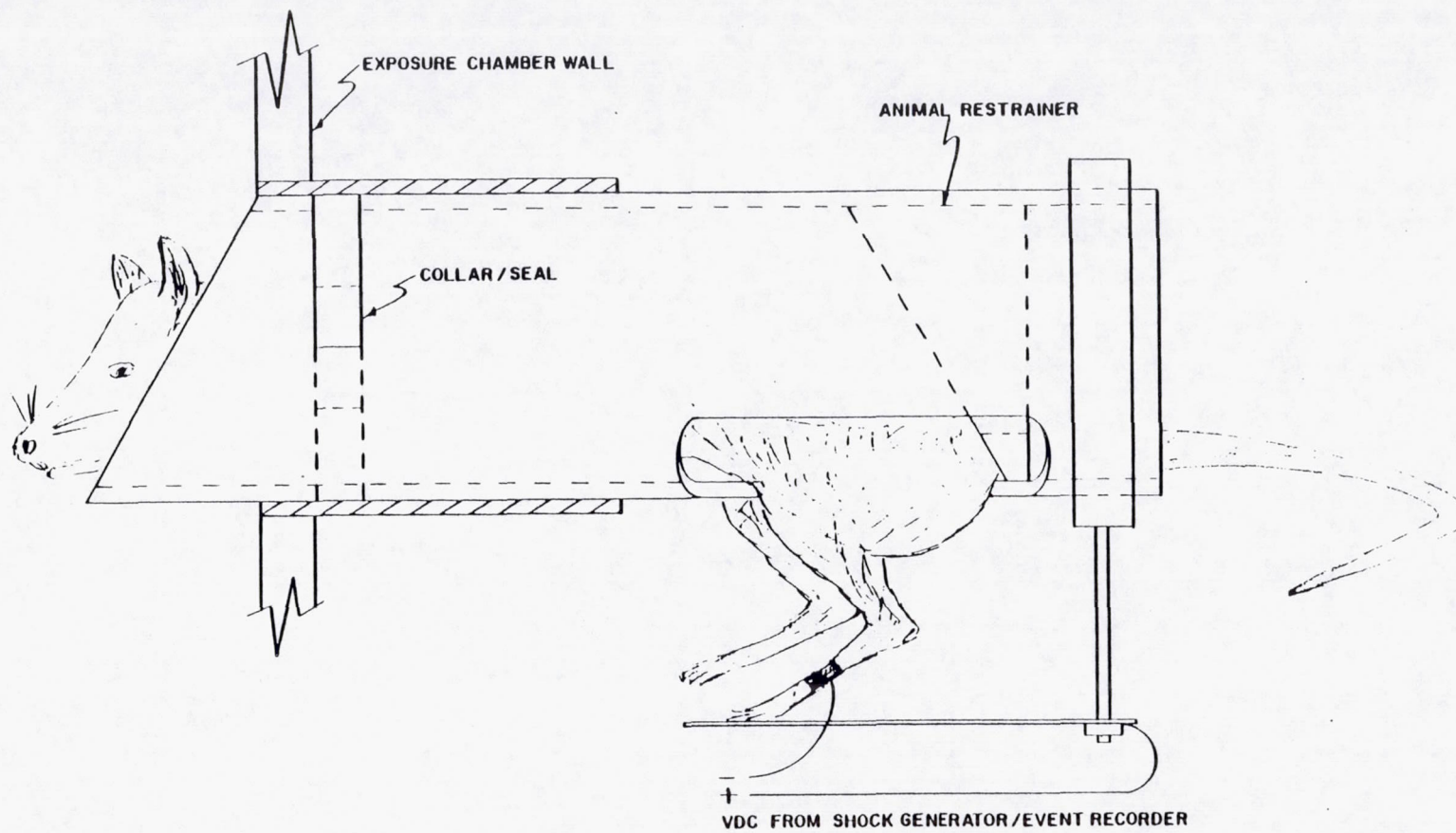


Figure 3. Leg Flexion Incapacitation Apparatus

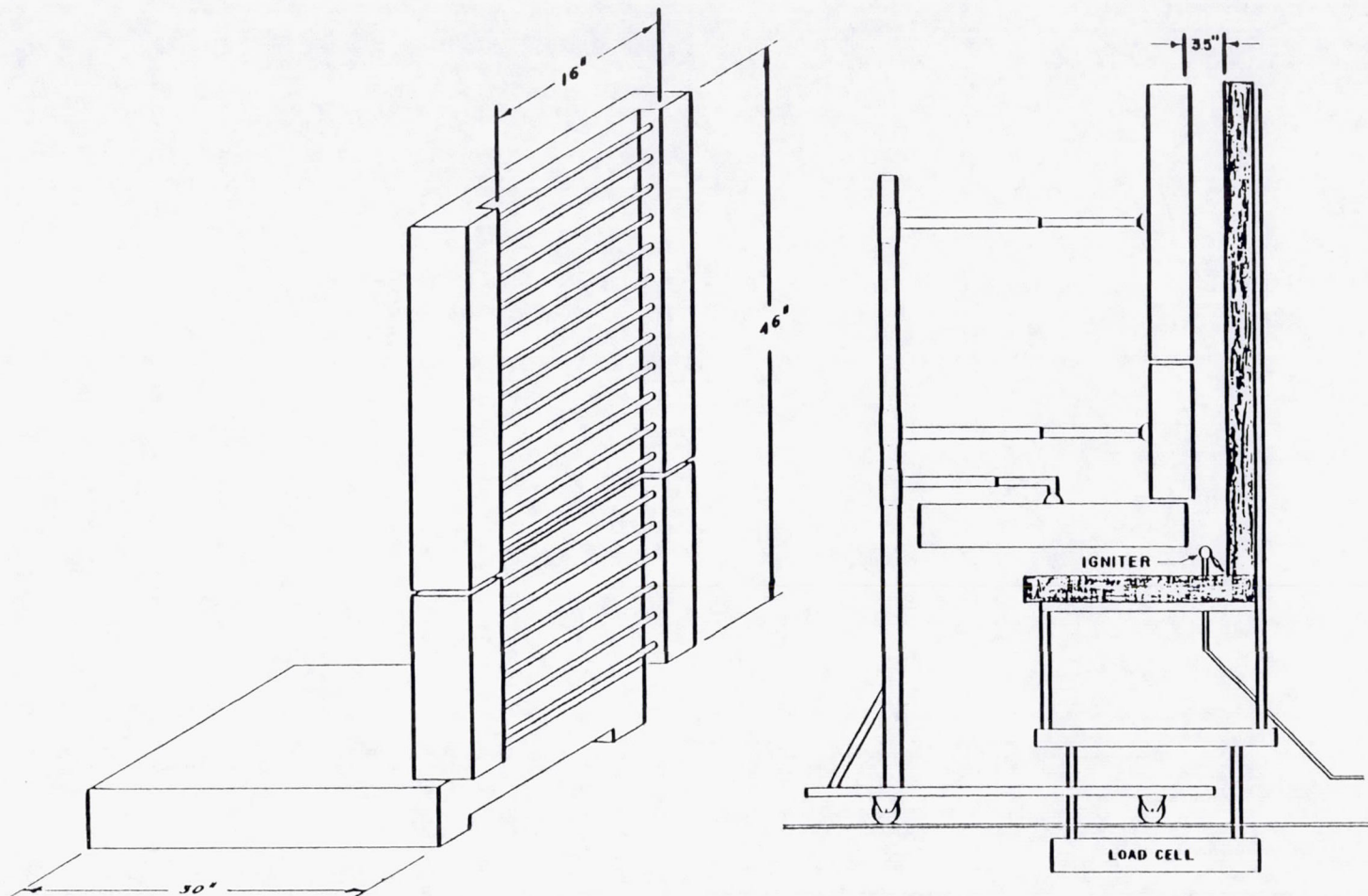


Figure 4. Radiant Panel and Panel-Seat Cushion Arrangement for Aircraft Seats

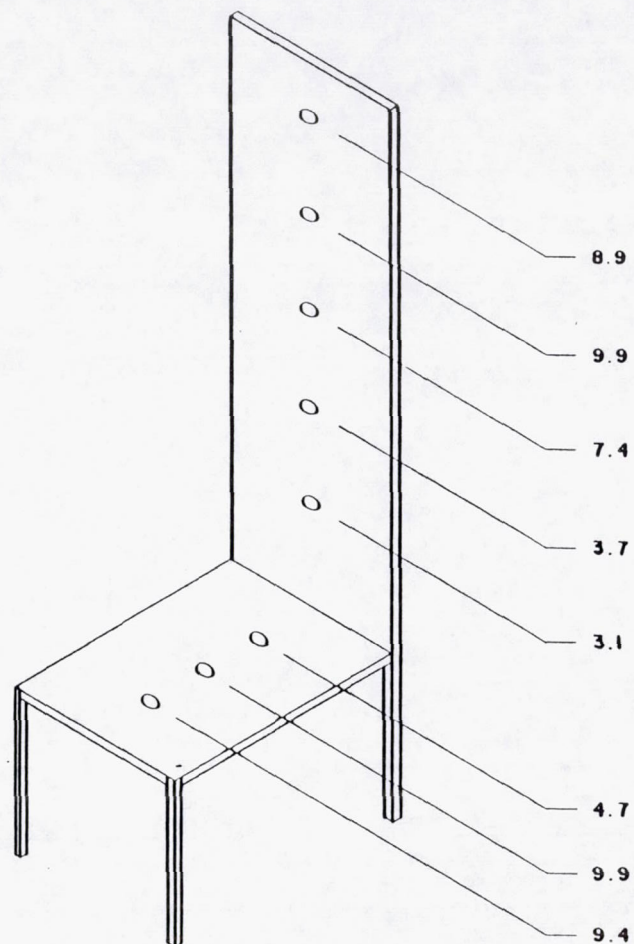


Figure 5. Heat Flux Distribution (Watts/cm²) for Nominal 10 W/cm² Panel Setting

several heat release rates generated constants for the equation ($Y = A_0 + A_1 X_1 + A_2 X_2 + \dots + A_n X_n$). In order to test the equation, the raw data from the calibration test were used to calculate the heat release rate (as though it were unknown). The results of this calculation are shown in Figure 6 (Rate of Heat Release vs. Time for the calibration run) and in Appendix B, Table B-I.

C. Experimental Procedure

The seat cushions (two seats and two backs) were wired to an "analog" seat frame. This analog design was a solid metal right-angle frame with room for three seats across and a spacing of 3 in. between seats. Such a design was necessary because the cushions were experimental and were not part of an actual airline seat configuration. The seats were tested in the upright position.

The seat cushions and analog frame were positioned on the load cell and the radiant panel was situated directly opposite one of the seats (the left seat as viewed from the front). The pilot flame was ignited (not in contact with the test materials). The load cell had been previously balanced to account for the weight of the seat frame and the air supply was flowing (part of the air was necessary to cool the load cell). The door to the room was closed immediately prior to the start of the test.

Data collection began at "0" time in order to establish a baseline. At 1.0 minute into the test, the radiant panel was turned on. The radiant panel was left on for five minutes (until 6.0 minutes into the test), then it was turned off and withdrawn from the seats in order to reduce interference with the burning or damage to the panel lamps.

The test continued until all evidence of burning and smoldering had ceased (this was established by visual observation, and load cell and gas response). In some cases, combustion appeared to slow down or stop and then restart. "Before" and "after" photographs of Tests 1 - 9 are in Appendix A.

"Raw data" consisted of run time, 12 channels of thermocouple output (converted to degrees Fahrenheit), and 10 channels of "other" data (load cell in pounds, CO and CO₂ gas concentrations in percent in both the room and the animal exposure chamber, hydrocarbon concentrations in ppm in both the room and animal chamber, oxygen depletion in percent in both locations, and smoke as % Transmission in the 12-in. square stack). The raw data for all the "advanced" materials tests are in Appendices D and E (the room gas concentrations are listed under "cube").

Data were recorded directly onto a floppy disk on the Wang MVP Computer system, through a Fluidyne scanner and A/D converter. Temperature data were recorded every 15 seconds. Gas and smoke data were recorded every 30 seconds; however, due to the switching arrangement to monitor both the room and the animal chamber, concentrations in any one location (the "cube" or the "chamber") are reported only once each minute. Thirty seconds were adequate for gaseous equilibration of the analysis system.

D. Animal Exposure

In order to assess toxicological effects, smoke (see definition) from the room was continuously transported to a remote animal exposure chamber. Concentrations of the primary gases (CO, CO₂, O₂, and hydrocarbons) were determined both in the room and in the animal chamber.

Two techniques were used to determine behavioral incapacitation, the leg-flexion avoidance response (Reference 2) and a rotorod procedure (References 3 and 4). The leg flexion technique was used more often than the rotorod procedure because the former required little training time for the animals. In two test runs, both the rotorod and the leg flexion procedures were used.

The rotorod task is an established technique for measuring sensorimotor dysfunction in rats and has previously been successfully employed in combustion toxicology studies (Reference 4). The rotorod unit consisted of three independent compartments (each 15 x 25 x 43 cm) constructed of aluminum sheet and brass rods and housed inside a 300 l acrylic chamber (Figure 2). Smoke flowed freely through the chamber and into all compartments. A 1.27-cm diameter wood rod was positioned horizontally 25 cm above the apparatus floor and was driven at 4.0 rpm by an externally-mounted motor. All metal surfaces of the apparatus were connected to electric shock devices to provide the incentive for the rats to remain balanced on the rotating rod. Falls from the rotating rod were recorded by a sensing mechanism connected to the floor.

Prior to testing, rats were trained to mount and remain balanced on the rotating rod. Ten 60-minute sessions of training were employed for each animal. When unstressed by exposure to combustion products, the rats would not voluntarily dismount from the rod, and were easily able to remount within 3 seconds if deliberately dislodged. For this test series, an animal was considered incapacitated if, upon falling from the rod, it was unable to remount within 15 seconds.

For the leg-flexion behavioral paradigm, each rat was positioned to receive an electrical shock (4.6 ma) through its leg upon contact with a metal platform connected to a constant current shocking system. The animal rapidly learned to avoid the shock by flexing its leg and a satisfactory baseline performance level was readily attained. The animal was considered incapacitated when it no longer effectively responded to the shock by flexion of its leg. A strip chart system recorded each animal's responses and the time of each response. The mean time to incapacitation was obtained by averaging the incapacitation times of the five animals. The five test animals were observed for lethality and any other toxicological symptoms during the exposure and for 14 days post-exposure.

III. RESULTS

A. Heat Release

Heat release data are tabulated in Appendix C. Plots of rate of heat release (RHR) in kilowatts (kW) and cumulative energy in megajoules (MJ) versus time are shown in Figures 7 - 19 (Test 3 is not included since it was incomplete). A comparison of Tests 1, 5 and 7 is shown in Figure 14. Table II is a summary of maximum rate of heat release and cumulative energy released for all tests except No. 3.

Comparisons among the "advanced" seat compositions, Tests 1 - 8 (Figures 7 - 13), reveal that Seat 1 ("baseline" composition) had the highest maximum rate of heat release (107 kW) and the highest cumulated energy at all stages of the test. Of the other compositions, Seats 2 and 5 had the highest rates of heat release (90 and 86 kW, respectively). The lowest rates of heat release were exhibited by Seats 6, 7 and 8 (62, 65 and 62 kW, respectively). These seats also showed the lowest total cumulated energy release. Seat 7 reached its maximum RHR sooner than comparable materials (this can be seen from the data in Table II and also from the initial slope of the RHR versus time curve for Seat 7, Figure 12). Figure 14 illustrates the comparison among Seats 1, 5 and 7.

The commercial salvage seats (Table IA) were run under several different sets of conditions. Test 9 was run at the same time as Tests 1 - 8, and under the same conditions. Four other tests were run previously and had been reported in an Interim Progress Report (March 31, 1980). However, these results have been revised based on newer methods of calculation and the new values are reported in Table II. Plots of rate of heat release are in Figures 15 - 19.

TABLE II

HEAT RELEASE SUMMARY
AIRCRAFT SEAT TESTS
SwRI ROOM CALORIMETER

Seat No.	Maximum RHR (kW)	(Time, min.)	Cumulated Energy Release (MJ)			
			10 min.	20 min.	Total	(Time, min.)
1	107	(6.0)	38	44	44	(38)
2	90	(5.0)	30	34	36	(40)
4	70	(5.25)	24	30	34	(39)
5	86	(5.75)	26	31	38	(56)
6	62	(5.25)	21	26	26	(34)
7	65	(3.5)	21	23	23	(34)
8	62	(5.0)	23	28	30	(34)
9	128	(3.0)	49	68	75	(53)
10W-1	93	(4.0)	40	50	50	(21)
10W-2	138	(4.0)	49	77	92	(36)
10W-3	101	(5.0)	41	64	95	(59)
5W	127	(4.0)	47	68	72	(37)

Tests 10W-2 and 10W-3 are in reasonable agreement with Test 9 with respect to maximum rate of heat release (138, 101 and 128 kW, respectively). Likewise, the cumulative energies for the first 10 minutes are in reasonable agreement (49, 41 and 49 MJ). However, the total energy evolved in Tests 10W-2 and -3 were higher than Test 9 because there were three seats used instead of two. Test 10W-1 involved only one seat (due to a one-foot wide tray between the seats). Test 5W was run at 5 W/cm²; however, the heat release data and short-term cumulative energy release were similar to the tests run at 10 W/cm². It seems reasonable to conclude that, once ignited, these seats maintained combustion independent of any external heat flux.

B. Gas and Smoke Release

Maximum carbon monoxide concentrations and smoke densities are summarized in Tables III (Tests 1 - 8) and IIIA. Smoke densities were recorded as percent transmission (%T), then converted to Optical Density [O.D. = $\log (100/\%T)$]. Optical Density is proportional to the concentration of smoke particles, whereas percent transmission is simply a measure of light attenuation across a distance. Experimental data on weight loss; CO, CO₂, O₂ and hydrocarbon concentrations; and smoke density are located in Appendix D.

Carbon monoxide concentration and smoke density are, in addition to temperature, the most important measurements in terms of relevance to life safety in fires. Rates of release of gases have not been calculated from the raw data because gas measurements were made in the room environment rather than in the stack (smoke density was measured in the stack). In the room, convective mixing and dilution by the air flow

TABLE III

GAS AND SMOKE DATA
AIRCRAFT SEAT TESTS

Seat No.	Run Time, Minutes	Flame Out, Minutes	Weight, Pounds		Initial Weight	Percent Weight Loss	CO, ppm		Smoke	
							Maximum	(Time)	Min. %T	O.D.
1	38	22			7.9	53	1800	(3:30)	17	0.8
2	38	16 (33) ¹			10.6	34	800	(7:30)	28	0.6
3	(incomplete data)				14.3	52	(>1400)		(<9)	(>1.0)
4	40	26			14.6	33	2100	(6:30)	10	1.0
5	57	32			15.3	33	2200	(5:30)	5	1.3
6	34	11			8.7	29	1200	(8:15)	17	0.8
7	35	10			5.4	33	800	(7:30)	76	0.1
8	34	10 (21) ¹			6.5	49	1100	(7:30)	6	1.2

Notes: 1) Samples reignited

TABLE IIIA

GAS AND SMOKE DATA (Continued)

Test No.	Run Time, Minutes	Weight Loss, lbs.	CO, ppm		Smoke	
			Maximum	(Time)	Min. %T	O.D.
9	54	10.2	5600	(3:30)	0.7	2.1
10W-1	21	6.8	6700	(4:30)	0.7	2.1
10W-2	36	8.6	7100	(4:15)	1.2	1.9
10W-3	59	9.8	--	--	1.0	2.0
5W	37	7.3	5600	(4:30)	0.8	2.1

make calculation of rate of release less reliable. However, for comparison purposes, the relative room concentrations of the fire gases should suffice.

Under the conditions of these tests, carbon monoxide concentrations from the advanced seat materials never exceeded 2200 ppm in the room. The lowest CO values (800 ppm) were produced by Seats 2 and 7. Smoke optical densities were similar for all materials except Seat 7, which was notably low (O.D. = 0.2, compared to 0.6 - 1.3). The total mass loss of Seat 7 was the lowest of any material tested (due to the combination of low initial weight and low percentage weight loss).

Carbon monoxide concentrations for the commercial salvage seats were substantially higher than for the advanced materials. The range of maximum CO levels was 5600 - 7100 ppm. The smoke optical densities of around 2 probably reflect the detection limit of the smoke meter (1% Transmission).

C. Toxicological Assessment

The experimental set-up for assessing the toxicological effects of smoke in these tests has been described. The rate of circulation of smoke to the 300 l animal chamber was 8 cfm (226 l/min.). It was assumed at the outset that this rate of circulation would thoroughly mix and transport the gases into the animal chamber. After several experiments, it became apparent that this was not the case. Gaseous equilibration was not being achieved and this was not due simply to the expected time delay when using a flow-through system (where concentrations are exponential functions of time). A further complicating factor was that CO₂ concentrations were not being properly entered into the

computer (however, they were recorded on a back-up recorder), making it appear as though CO₂ was not undergoing dilution in the animal chamber.

The problem was caused by the recirculating pump being unable to effectively draw against restrictions in the line and therefore bringing in outside air. This was resolved by altering the recirculation loop to eliminate all restrictions. However, only two of the eight tests (Tests 4 and 8) were run with the proper circulation of gases.

Gas concentrations in the cube and in the animal exposure chamber are listed under the appropriate test number in Appendix D. The dilution of the gases from the cube to the animal chamber is apparent, for all tests except Tests 4 and 8. Plots of CO concentration (in the cube) versus time for Tests 1 - 8 are shown in Figures 20 - 26.

No animal incapacitation or death occurred in Tests 4 or 8. In Test 4, the CO concentrations for the duration of the run were equal to or greater than any of the other "advanced" cushion compositions (Tests 1 - 8). This seat was composed of a urethane cushion, neoprene fire blocking and Kermel/wool upholstery. It seems reasonable to expect that the composition of noxious or toxic fire gases, in addition to CO, from this seat would be as high as for any of the other seat cushions. Similarly, Seat 8 was composed of wool upholstery on a polyimide cushion, a composition that could produce different toxicants than neoprene or urethane. Thus, it is believed that the animal response data from Seats 4 and 8 were representative of the rest of the seat cushion composites.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Heat Release

Among the advanced cushioning materials, the lowest rates of heat release and total energy release were exhibited by Seats 6, 7 and 8. The cushion in each of these cases was polyimide foam.

The "baseline" for the advanced seat cushion tests, Seat 1, had a higher heat release than the other seats, but the magnitude of the difference cannot be assessed at this time. Seats 1 - 8, as a group, showed distinctly improved heat release characteristics over the commercial salvage seats.

B. Smoke Toxicity

Although animal data were available only for Tests 4 and 8, a reasonable conclusion can be drawn on the toxicological effects of smoke for this series of tests. Seats 4 and 8 produced fire gas concentrations comparable to the other seats, and no animal incapacitation or death resulted from either test. Thus, under these test conditions, it appears likely that none of the seat compositions produced sufficient fire gas levels to permit differentiation from others in the series. This is not to suggest that these seats could not produce significant toxic insults under other test scenarios or actual fire conditions.

Seat 7 was notably lower than the other materials in these tests with respect to weight loss, carbon monoxide evolution, visible smoke production, and burn time.

C. Recommendations

Fire testing of full-size composite materials is still in a developmental stage. There are numerous medium to full-size tests available;

however, none of them are standardized either in procedure or in quantitation of the data. The ignition source, air flow, total volume of the apparatus, and configuration of adjacent materials are different for different test scenarios. Some effort must be made to tie together the test results on similar materials from various procedures.

The key to making comparisons among different test procedures and being able to "scale" the results of one test to another is quantitation of the results. It is virtually impossible to take a battery of independent measurements (e.g., temperature or gas concentrations) at arbitrary locations and relate them to another test procedure. However, measurement of a property of a material (e.g., heat release), in quantitative terms, provides information that will be useful in a mathematical correlation among test procedures. The results of the room calorimeter tests, for example, can be useful in prediction of auto-ignition of adjacent materials, and the transport of heat and smoke to remote areas (e.g., down an airplane fuselage) in order to describe human tenability limits in a real fire situation.

Further tests need to be run. The effect of different air flow rates, different ignition sources and different orientations of radiant heat to the test material need to be examined. Smoke measurement and toxicity assessment must be done under more rigorous conditions (i.e., generate a higher concentration of smoke) in order to be able to compare and contrast materials.

A change in experimental design and an expansion of the scope of future experimental programs will answer most of the questions listed above, using the apparatus described in this report. Planned expansion

of the room calorimeter to make it more versatile and to allow a more complete and realistic assessment of smoke toxicity is underway.

REFERENCES

1. Fitzgerald, W.E., "Quantification of Fires: 1. Energy Kinetics of Burning in a Dynamic Room Size Calorimeter," Journal of Fire and Flammability, Vol. 9 (October 1978), pp. 510-526.
2. Packham, S. C., et. al., "The Toxicological Contribution of Carbon Monoxide as a Component of Wood Smoke," Journal of Combustion Toxicology, Vol. 5 (February 1978), pp. 11-24.
3. Hartung, R., et. al., "The Performance of Rats on a Rotorod During Exposure to Combustion Products of Rigid Polyurethane Foams and Wood," Journal of Combustion Toxicology, Vol. 4 (November 1977), pp. 506-522.
4. Mitchell, D., Rodgers, W.R., Herrera, W.R., and Switzer, W.G., "Behavioral Incapacitation of Rats during Full-Scale Combustion of Natural - Fiber and Synthetic Polymeric Furnishings," Fire Research, Vol. 1 (1978), pp. 187-197.

CALIBRATION TEST
HEAT RELEASE

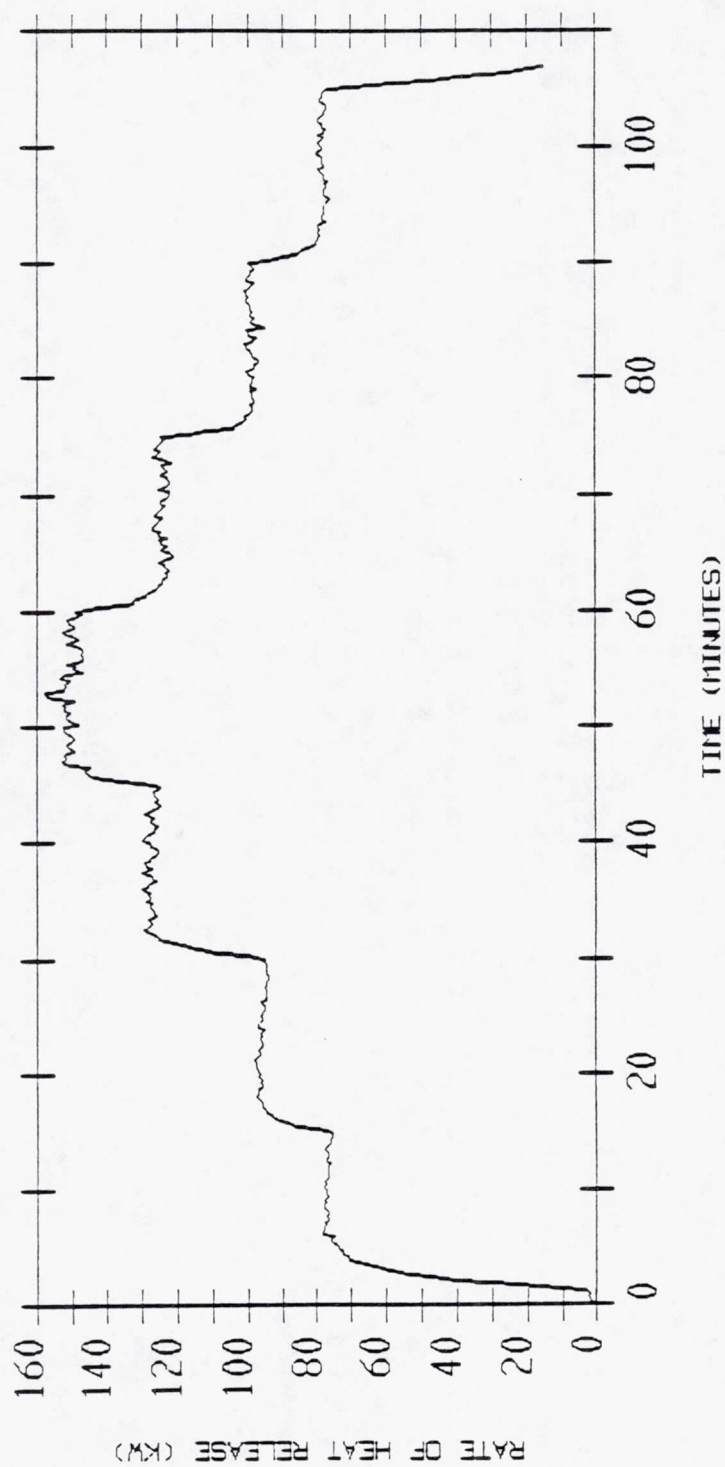


Figure 6

AIRCRAFT SEAT TEST #1 HEAT RELEASE

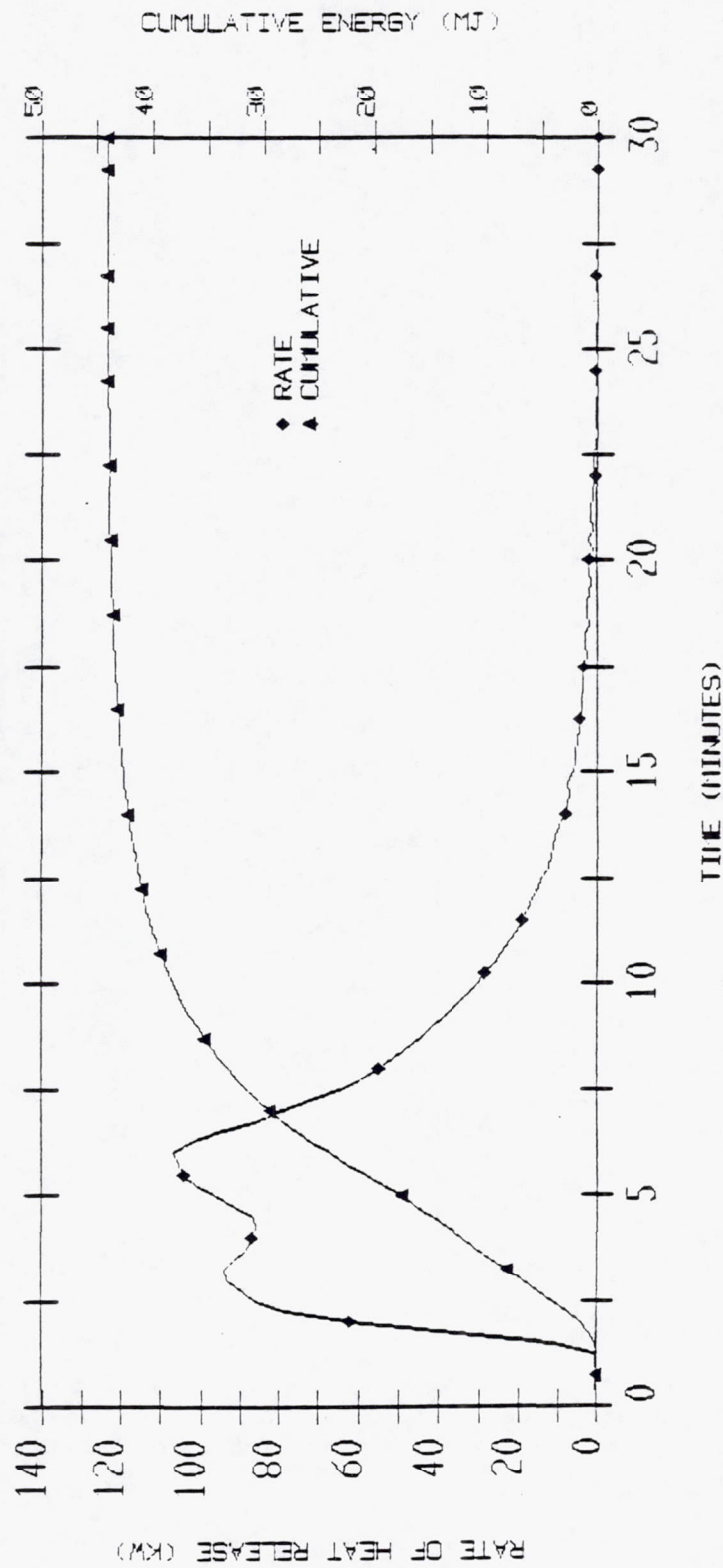


Figure 7

AIRCRAFT SEAT TEST #2

HEAT RELEASE

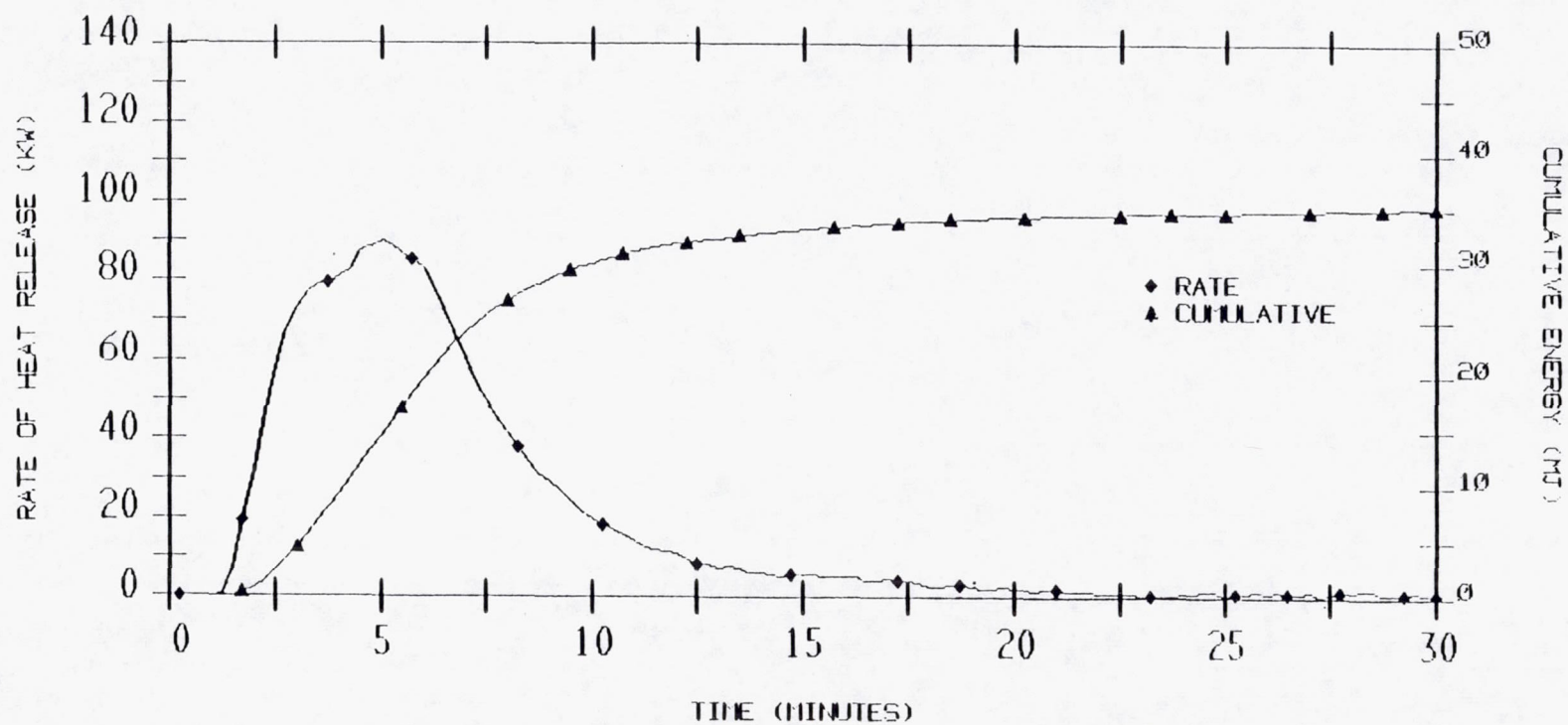


Figure 8

AIRCRAFT SEAT TEST #4

HEAT RELEASE

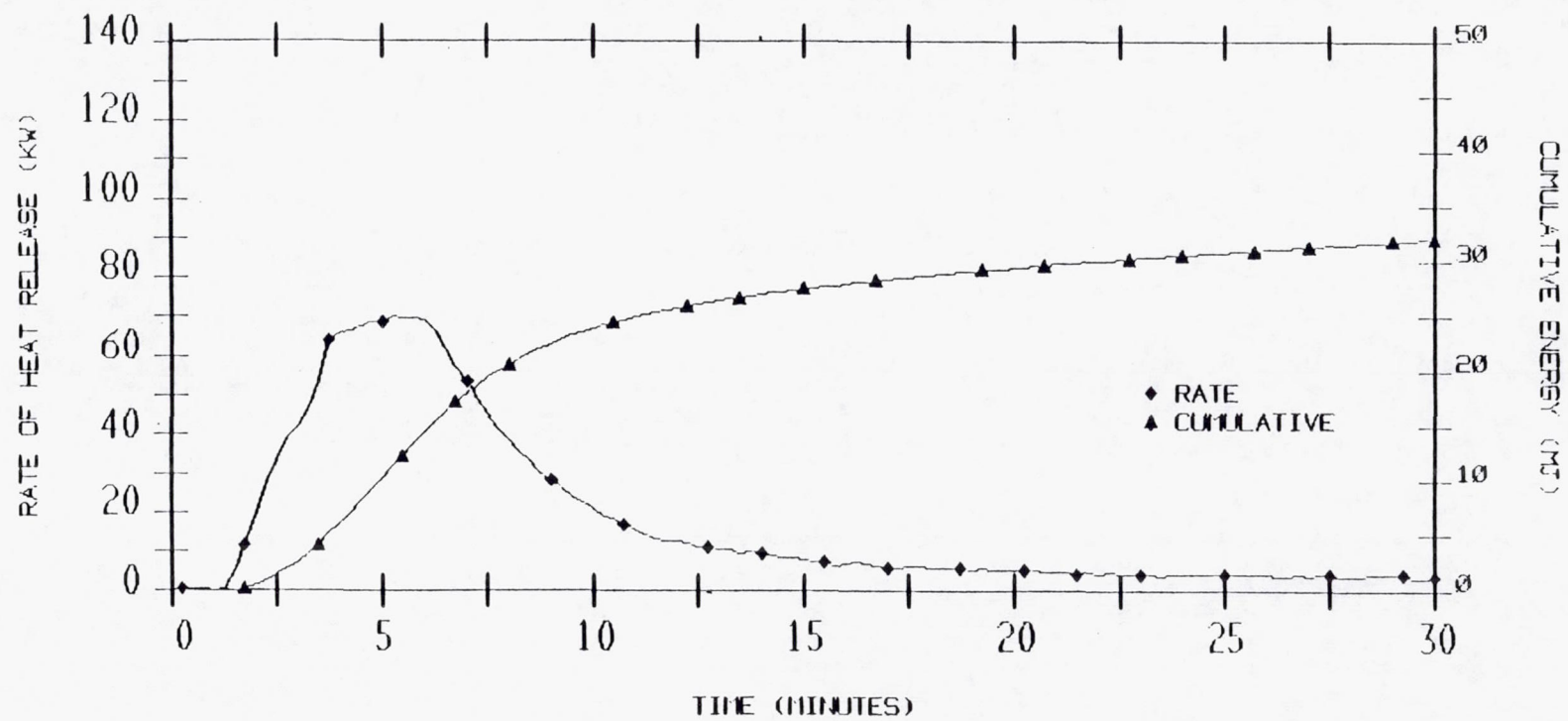


Figure 9

AIRCRAFT SEAT TEST #5

HEAT RELEASE

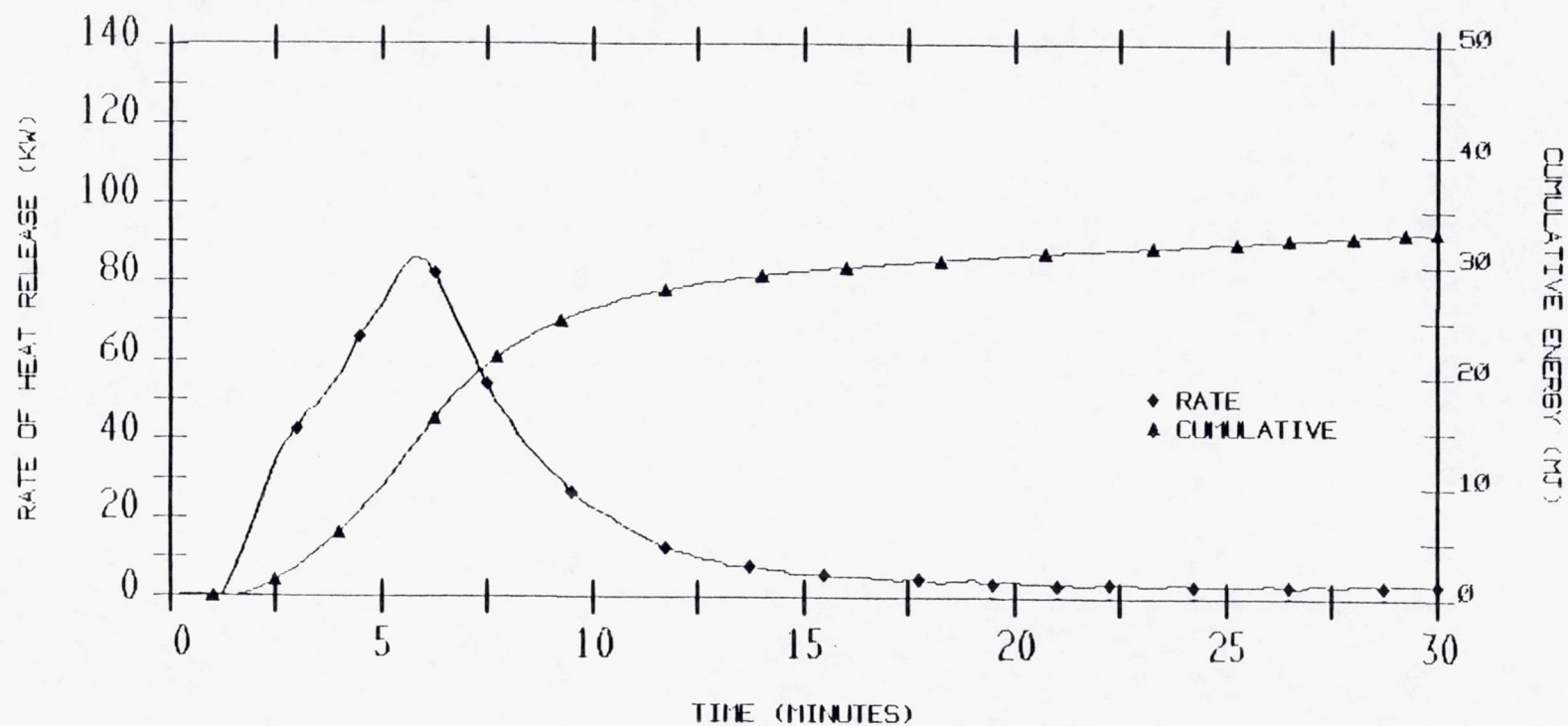


Figure 10

AIRCRAFT SEAT TEST #6

HEAT RELEASE

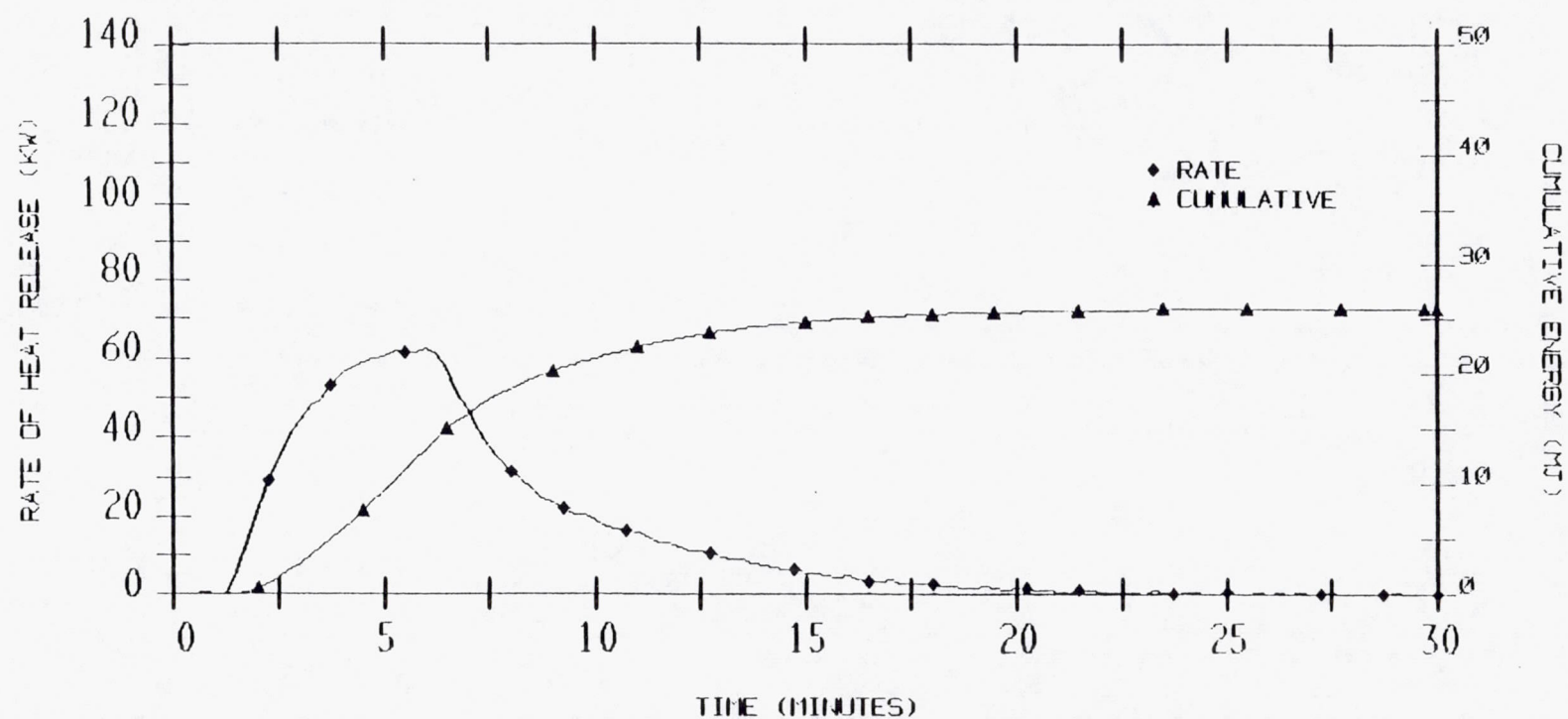


Figure 11

AIRCRAFT SEAT TEST #7

HEAT RELEASE

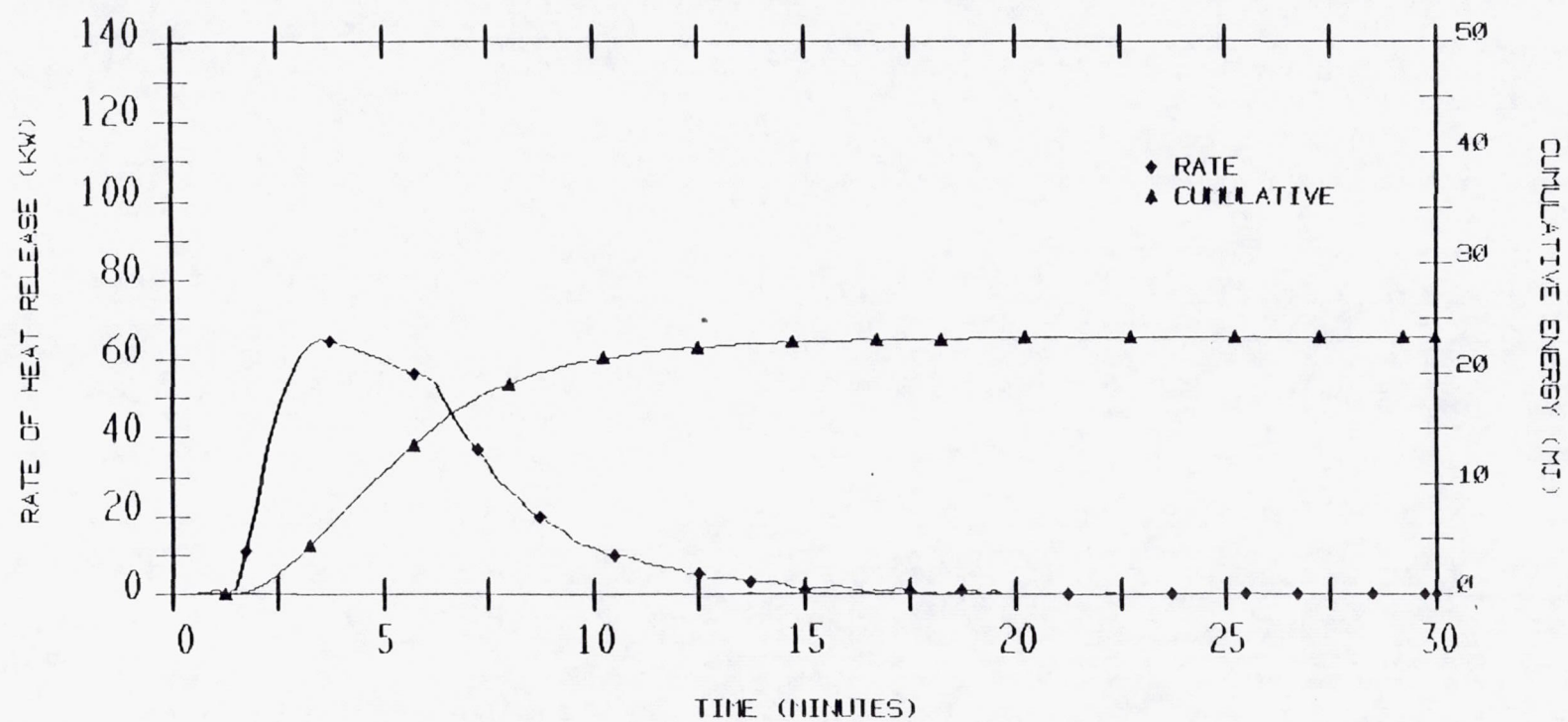


Figure 12

AIRCRAFT SEAT TEST #8

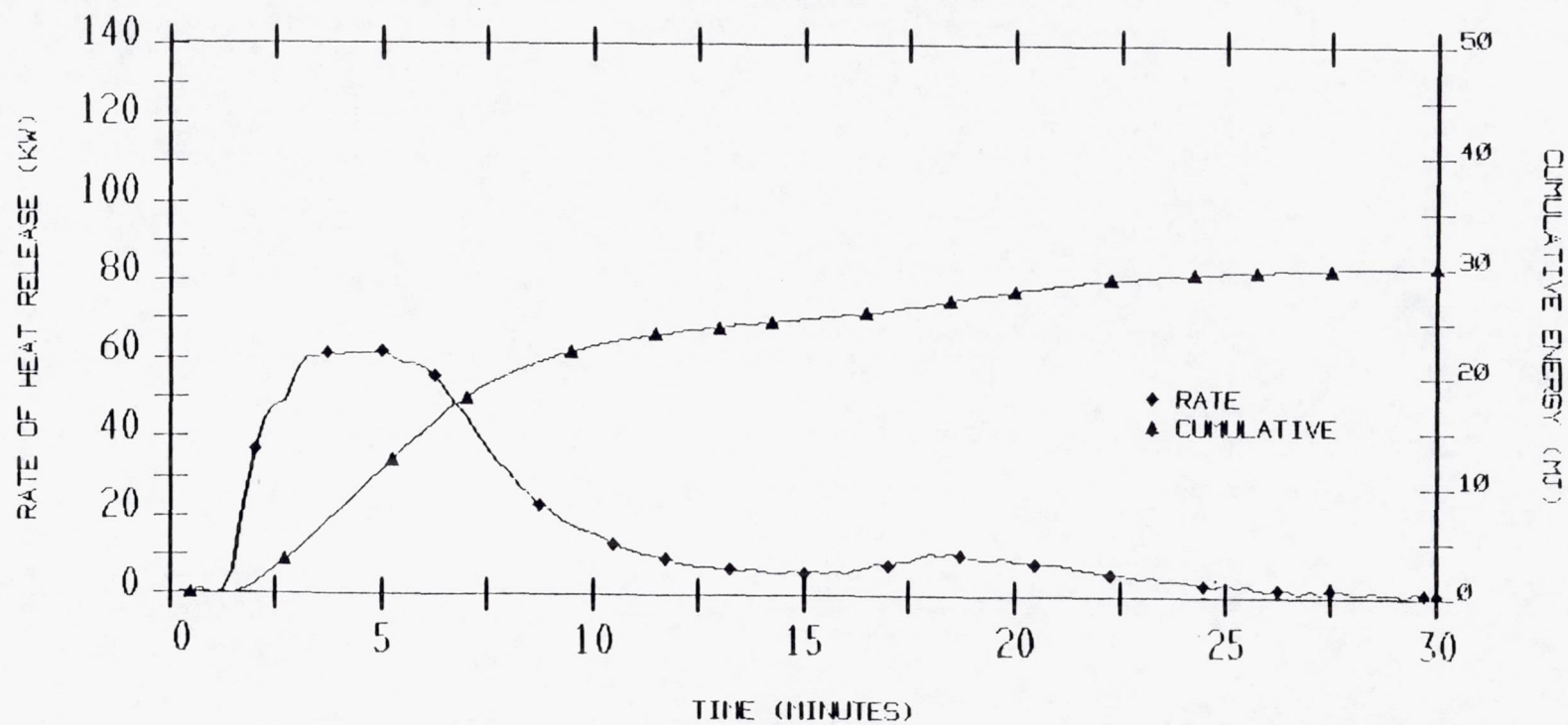
HEAT RELEASE

Figure 13

AIRCRAFT SEAT TESTS

HEAT RELEASE

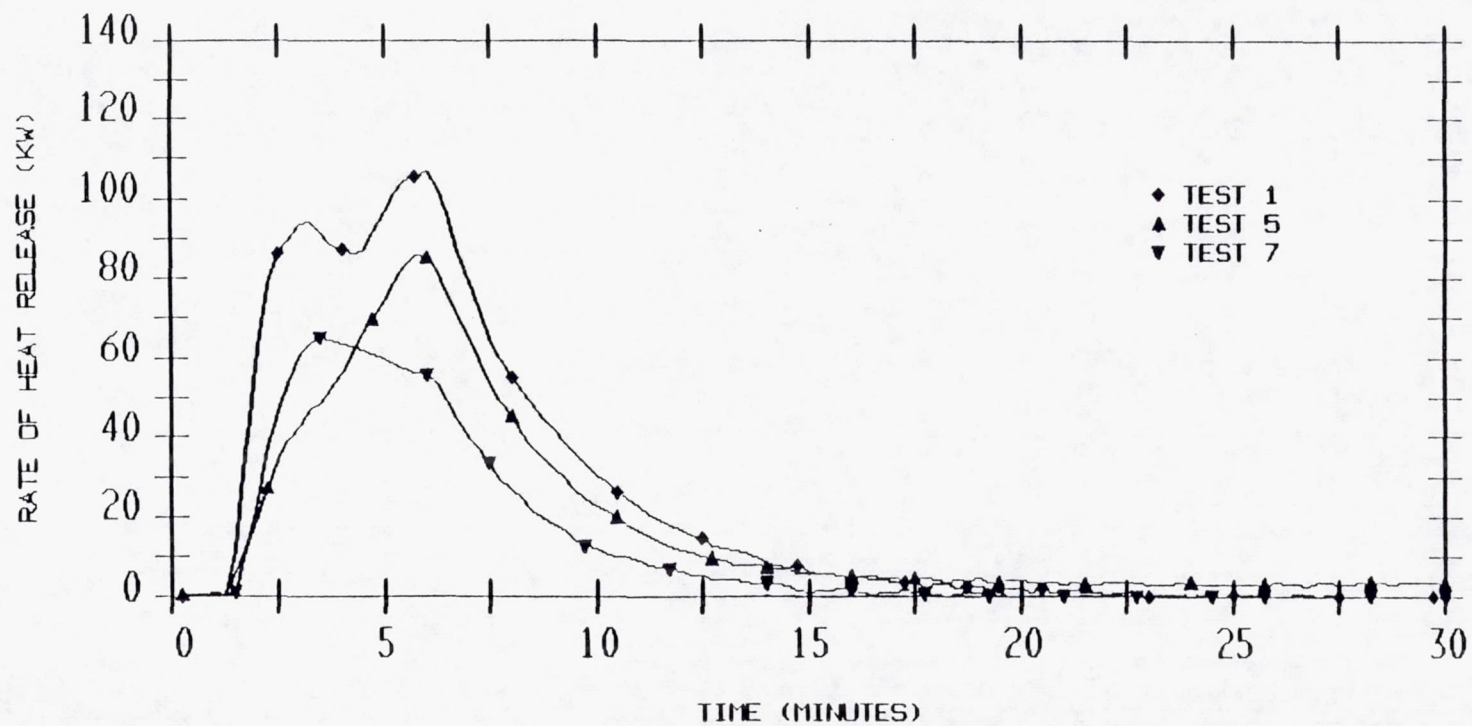


Figure 14

AIRCRAFT SEAT TEST #9

HEAT RELEASE

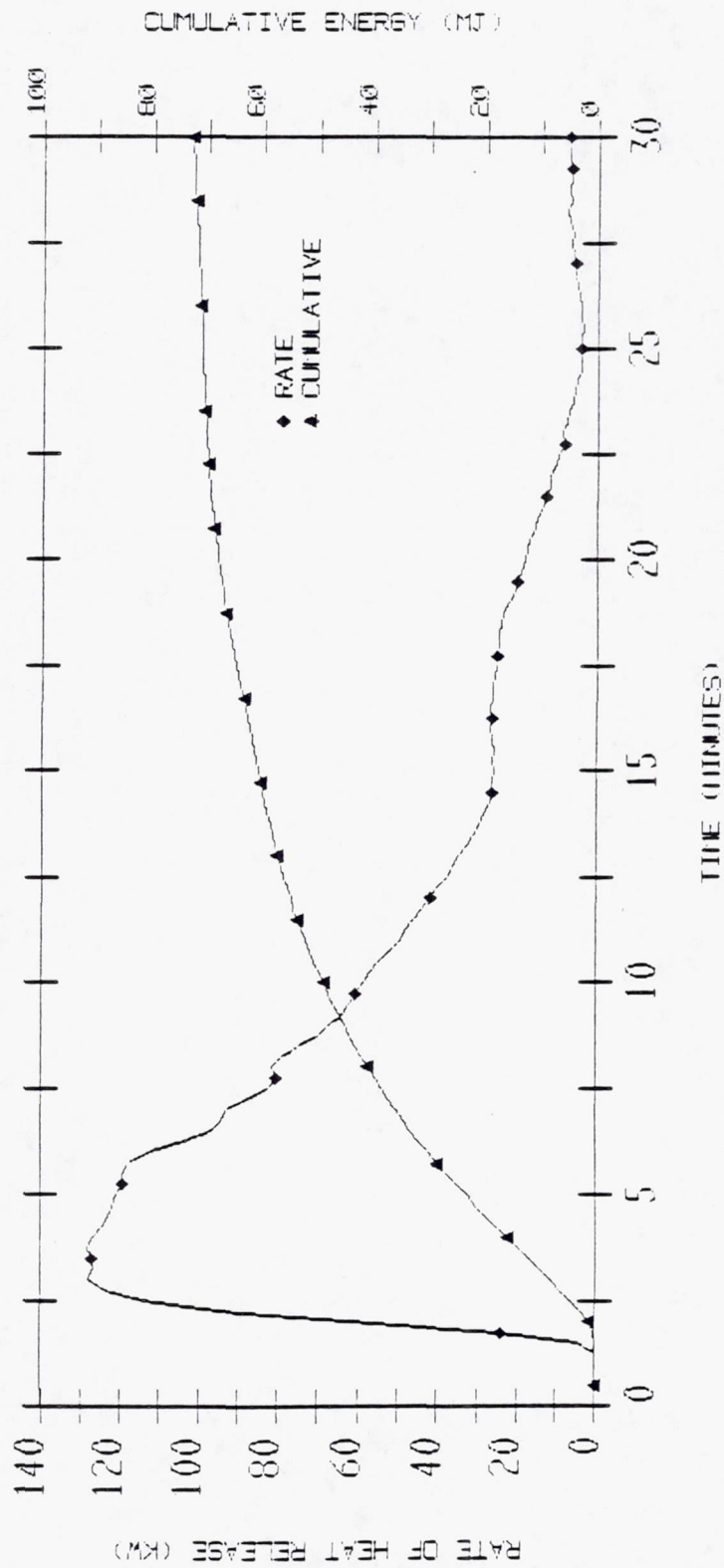


Figure 15

NASA BASELINE SEAT TEST #1 - 10W

HEAT RELEASE

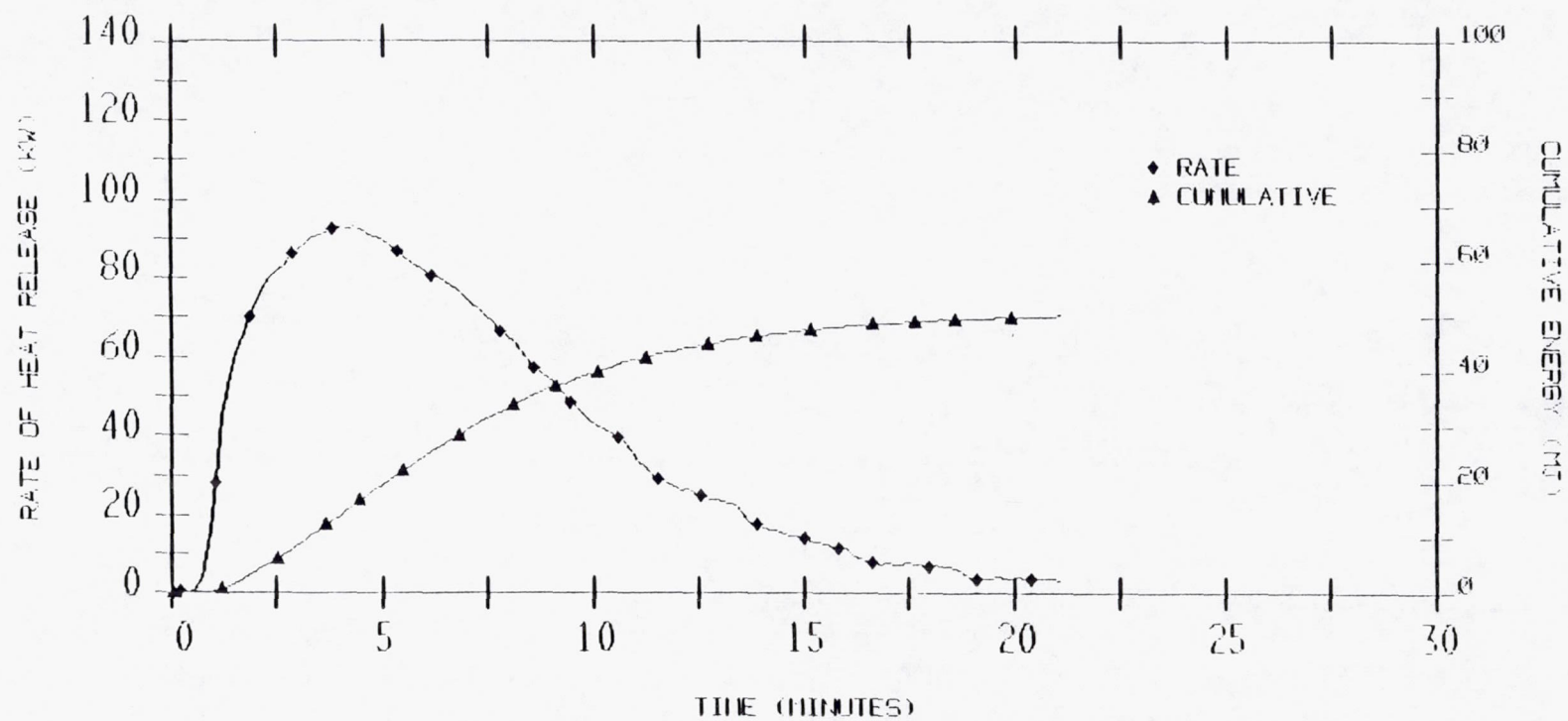


Figure 16

NASA BASELINE SEAT TEST #2 - 10W

HEAT RELEASE

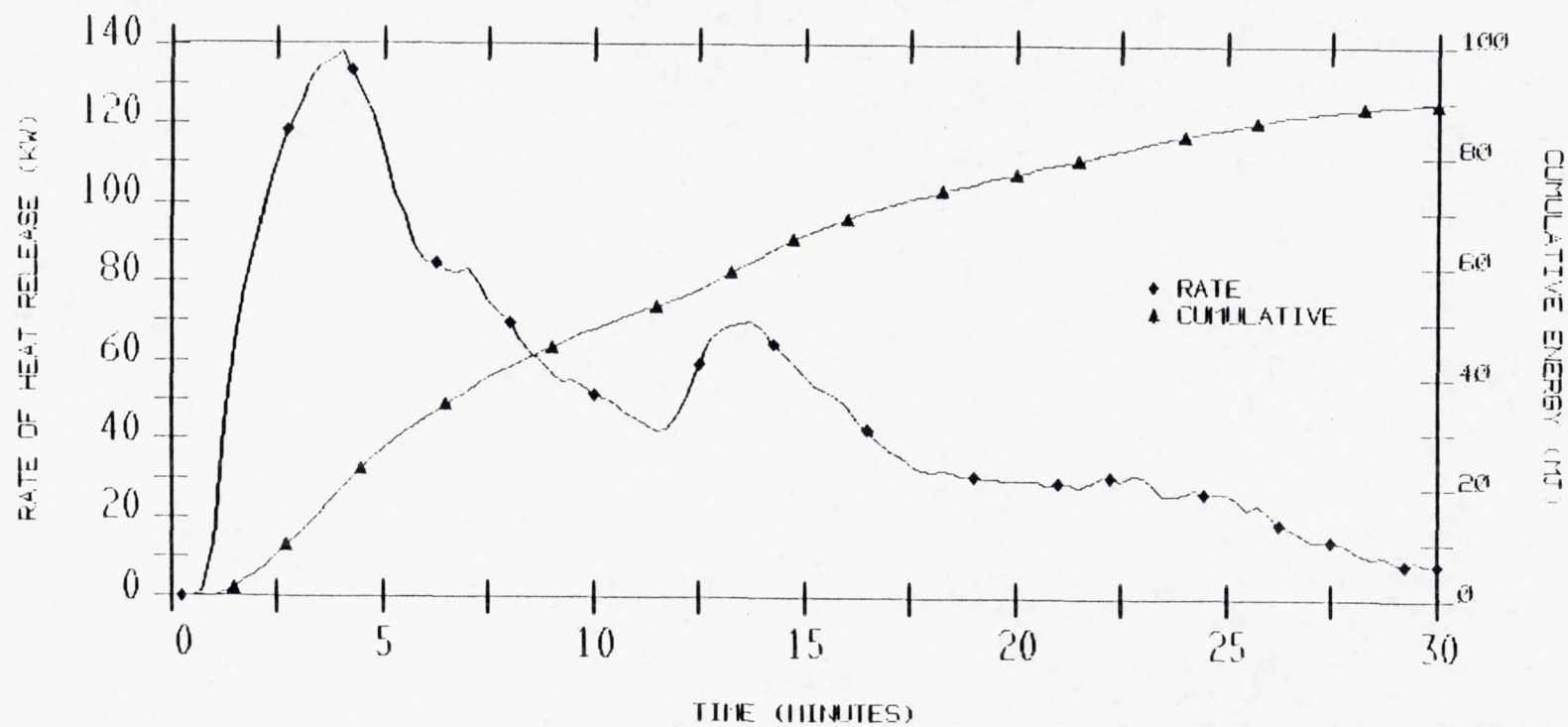


Figure 17

NASA BASELINE SEAT TEST #3 - 10W HEAT RELEASE

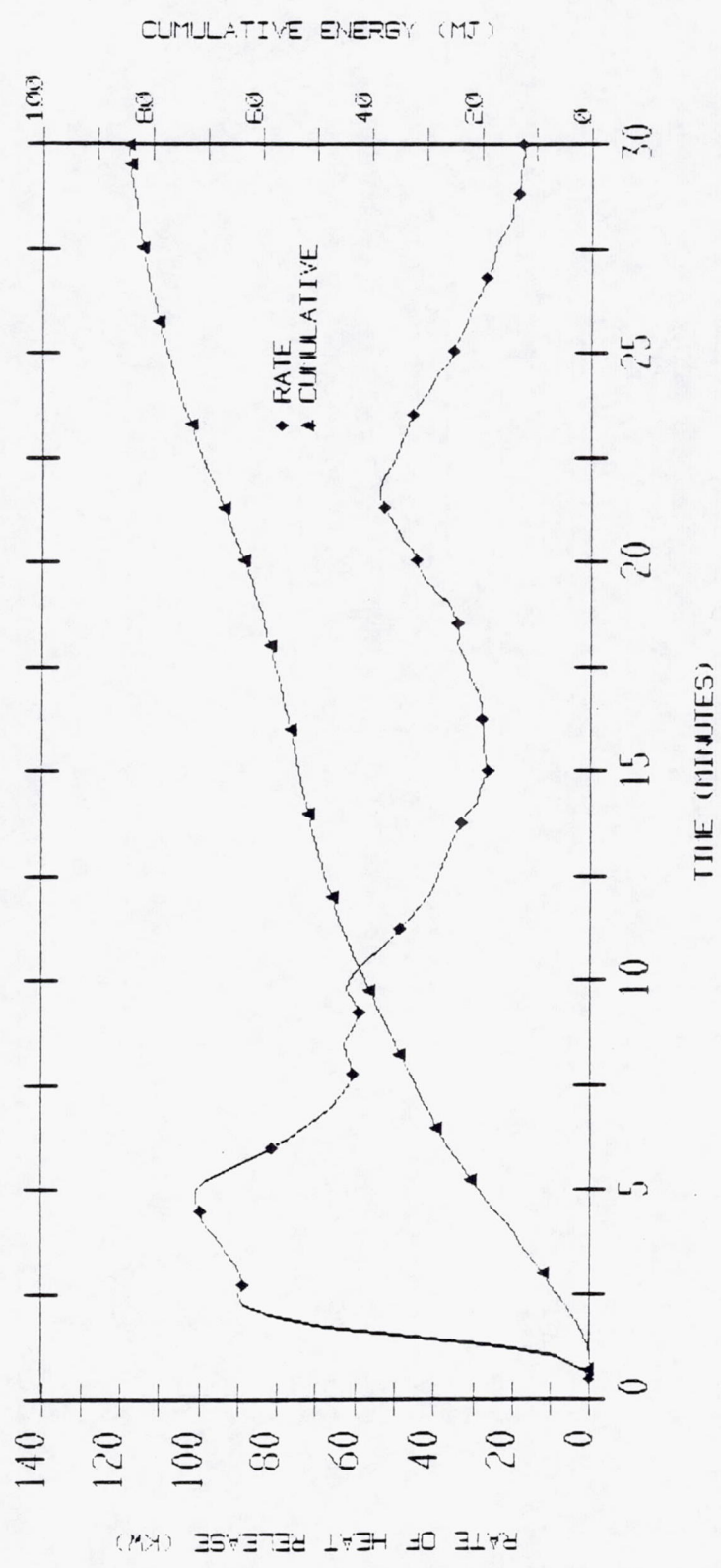


Figure 18

NASA BASELINE SEAT TEST #4 - 5W

HEAT RELEASE

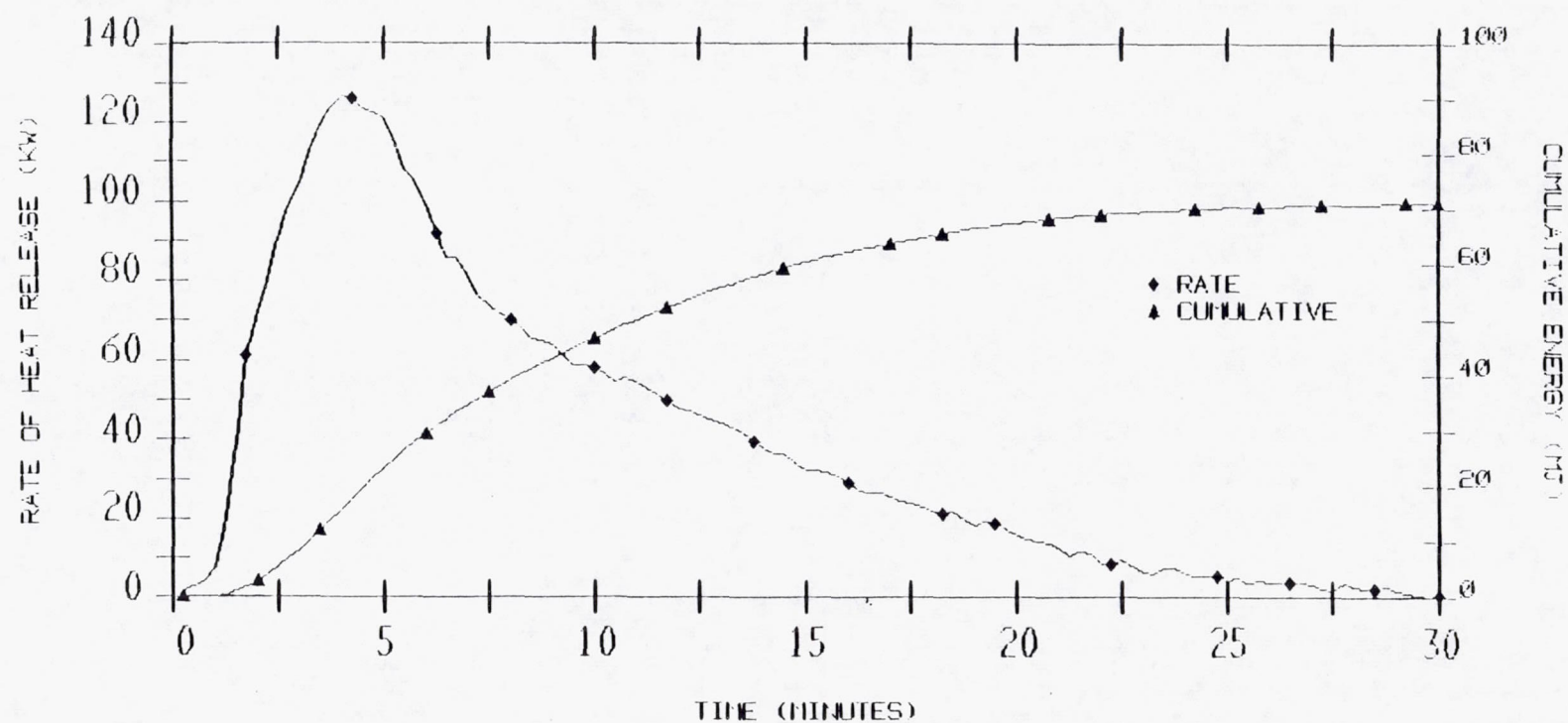


Figure 19

AIRCRAFT SEAT TEST #1
CARBON MONOXIDE

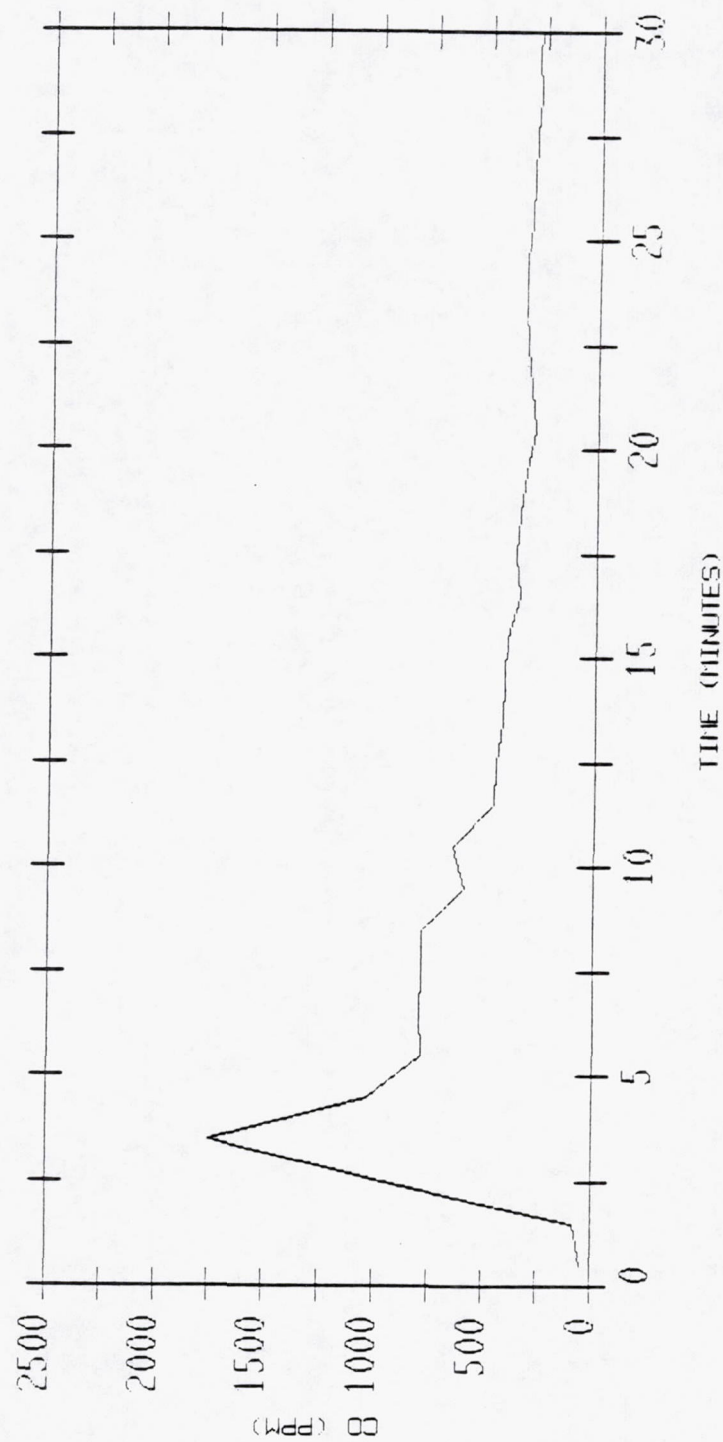


Figure 20

AIRCRAFT SEAT TEST #2

CARBON MONOXIDE

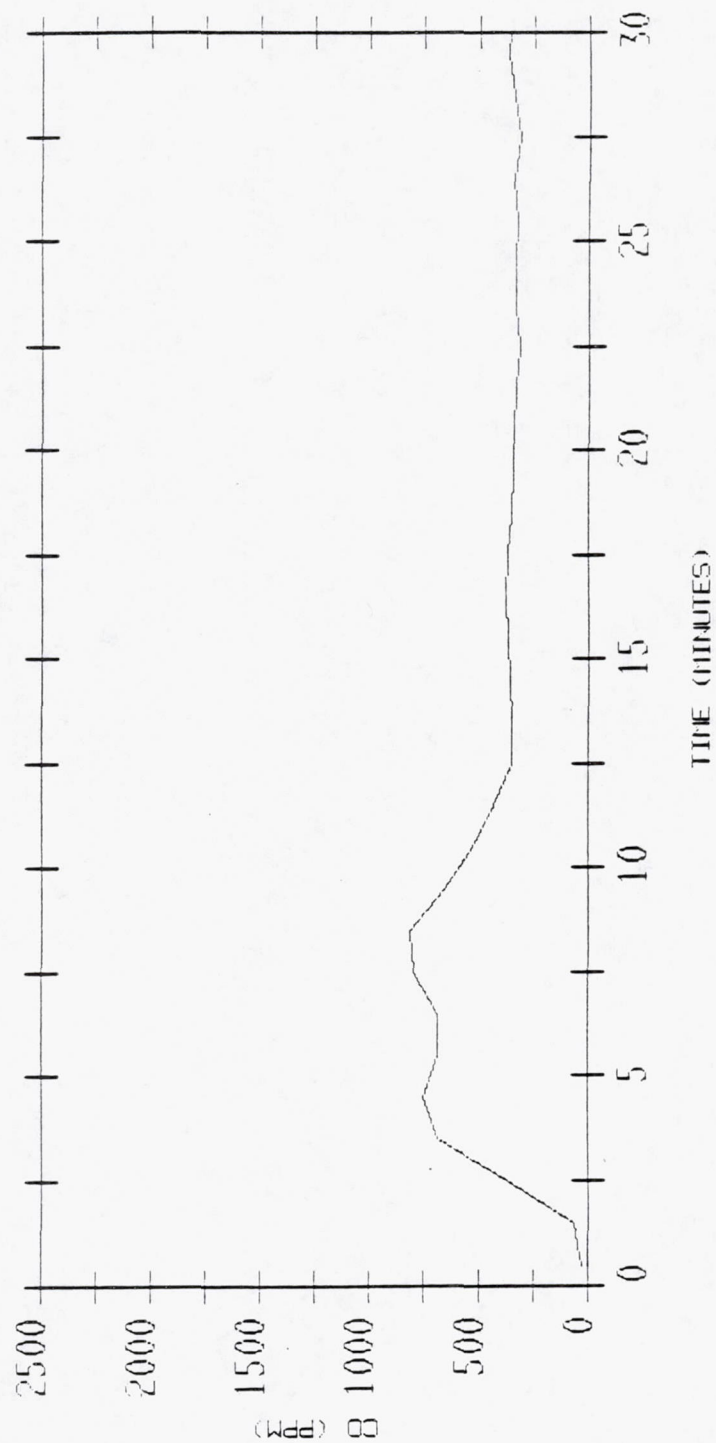


Figure 21

AIRCRAFT SEAT TEST #4
CARBON MONOXIDE

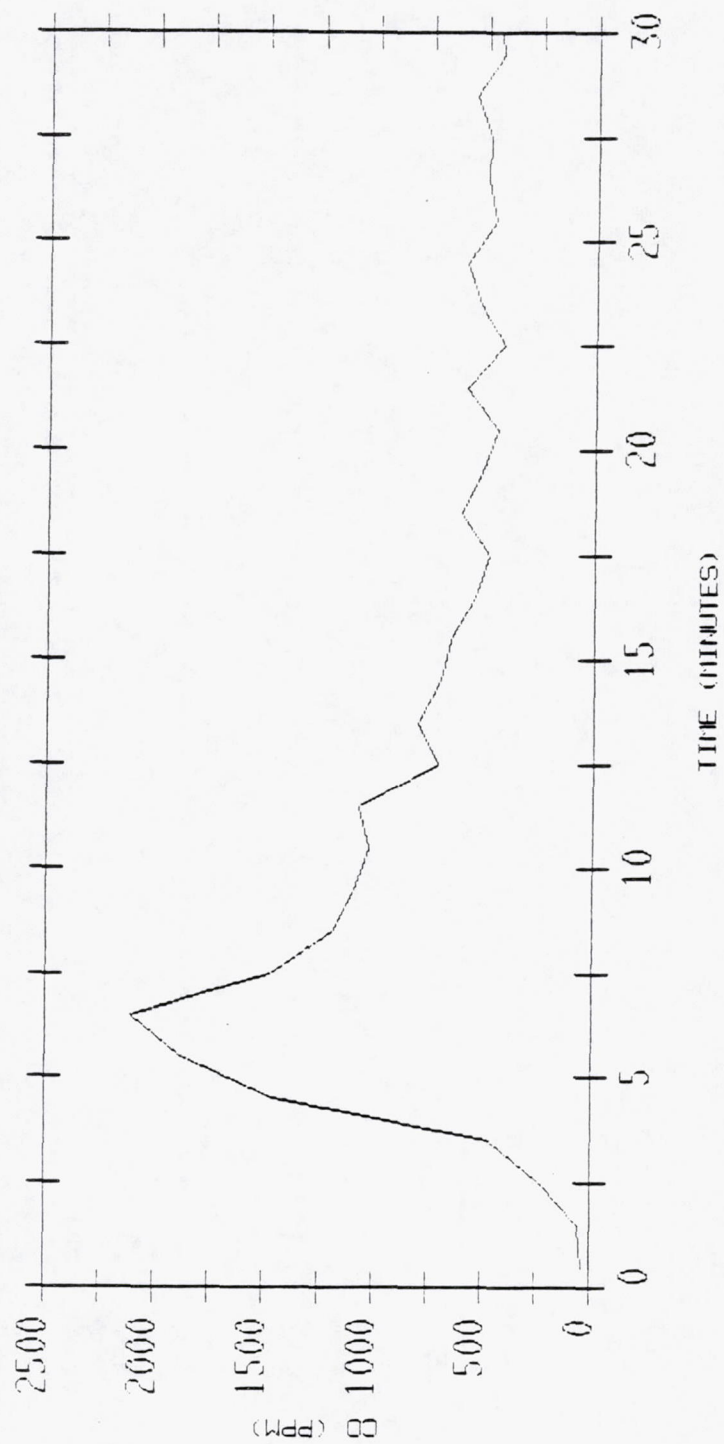


Figure 22

AIRCRAFT SEAT TEST #5
CARBON MONOXIDE

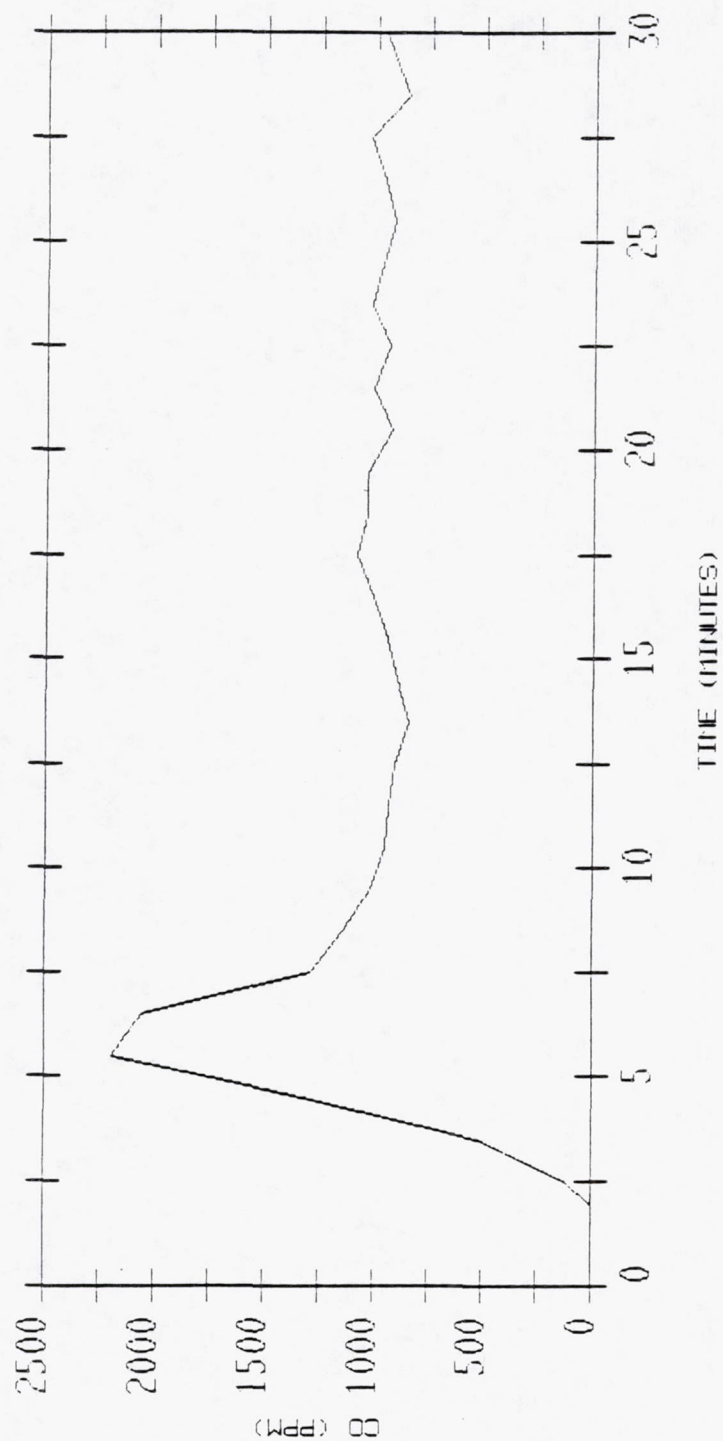


Figure 23

AIRCRAFT SEAT TEST #6

CARBON MONOXIDE

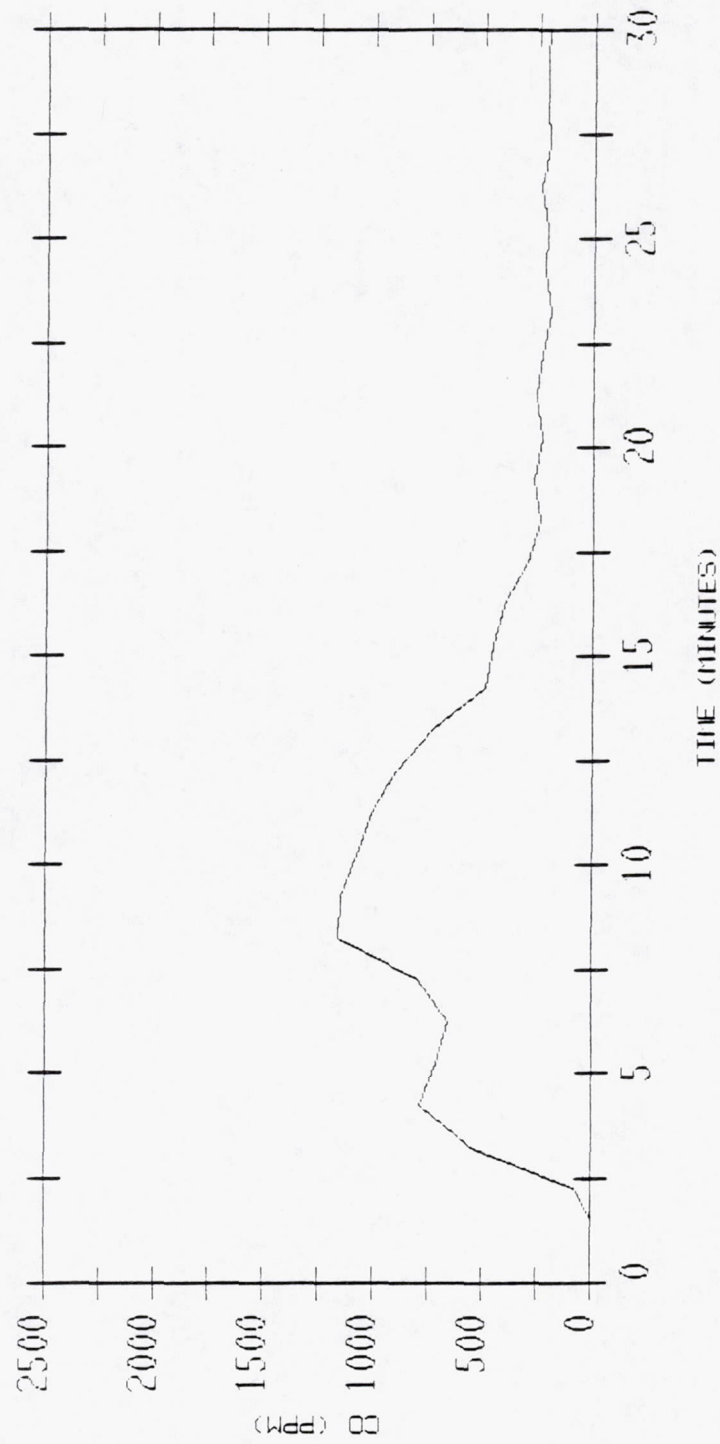


Figure 24

AIRCRAFT SEAT TEST #7
CARBON MONOXIDE

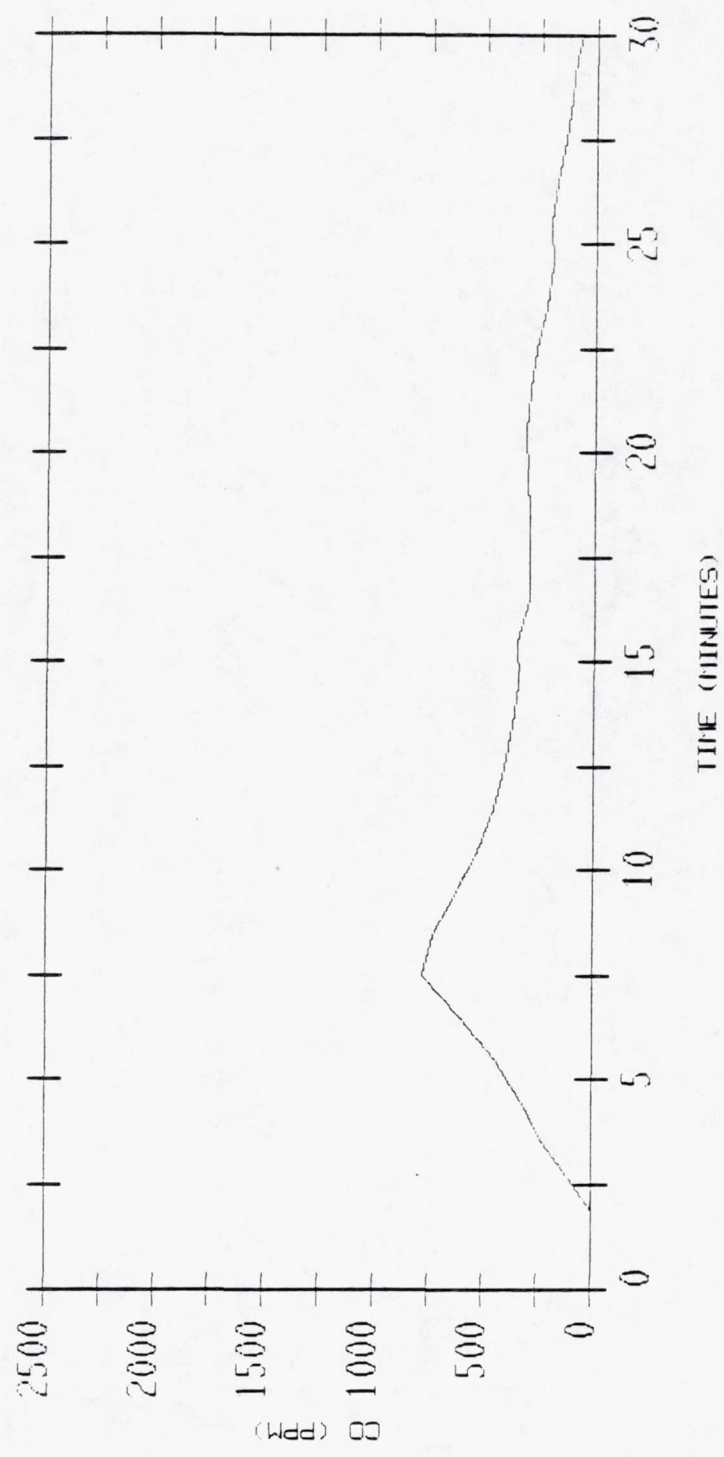


Figure 25

AIRCRAFT SEAT TEST #8

CARBON MONOXIDE

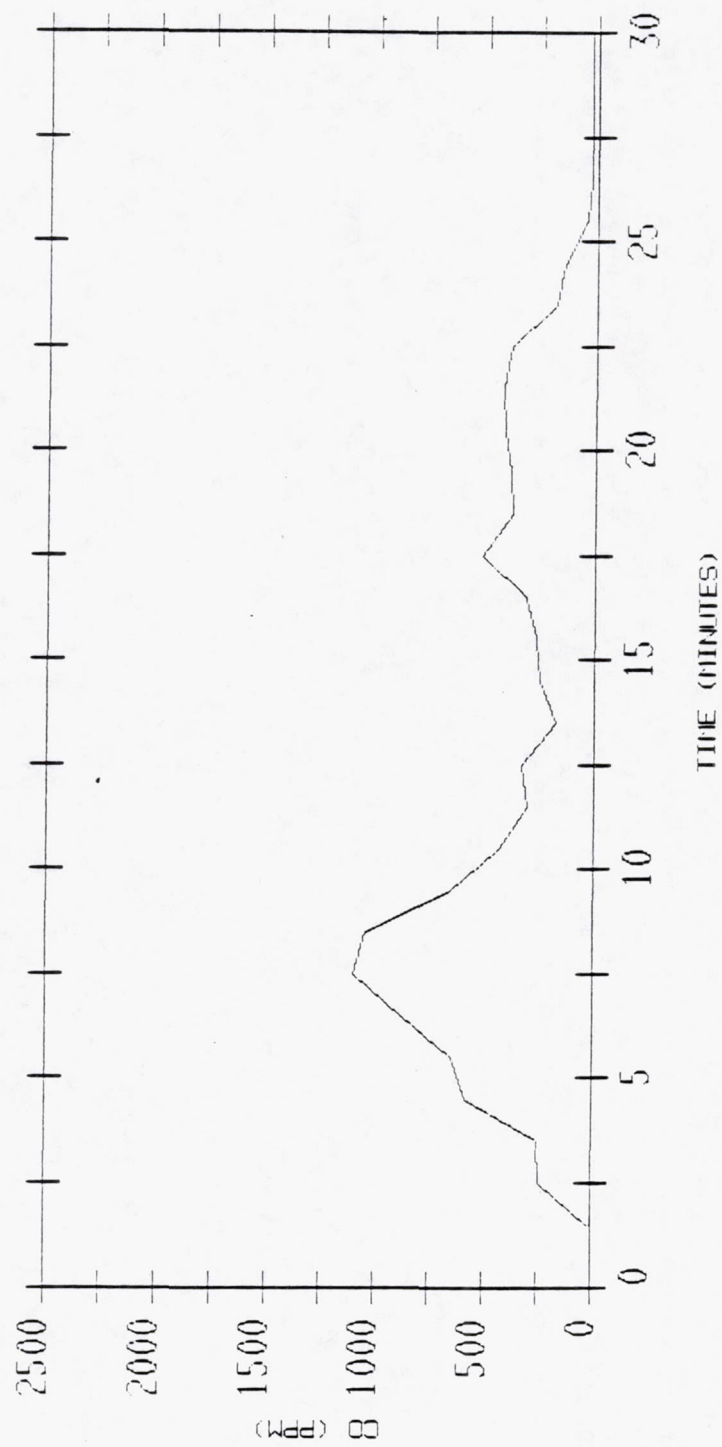


Figure 26

AIRCRAFT SEAT TEST #9

CARBON MONOXIDE

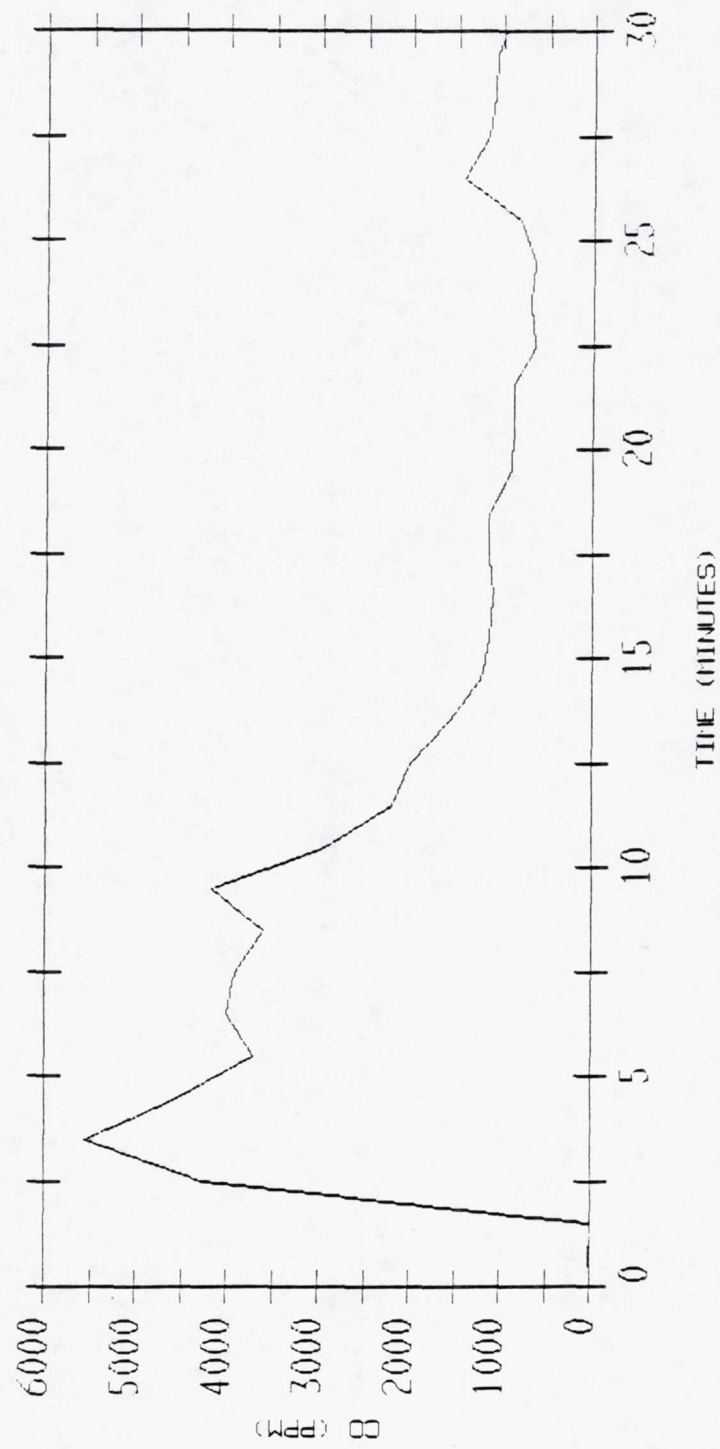


Figure 27

CONVERSION FACTORS

The following conversion factors may be useful in interpretation of data in this report:

$$1 \text{ ft}^3 = 28.317 \text{ liters}$$

$$1 \text{ kilowatt (kW)} = 56.907 \text{ Btu/min.}$$

$$1 \text{ Megajoule (MJ)} = 10^3 \text{ kW} \cdot \text{sec.}$$

$$1 \text{ lb} = 0.45359 \text{ kg}$$

APPENDIX A
PHOTOGRAPHS

NASA SEAT TESTS

November 19 - 26, 1980

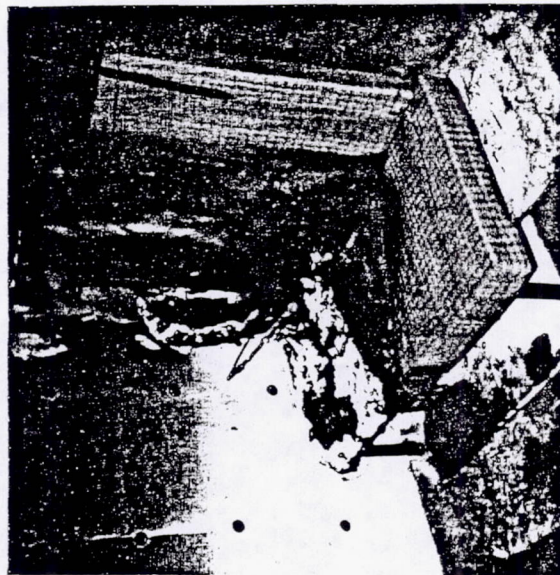
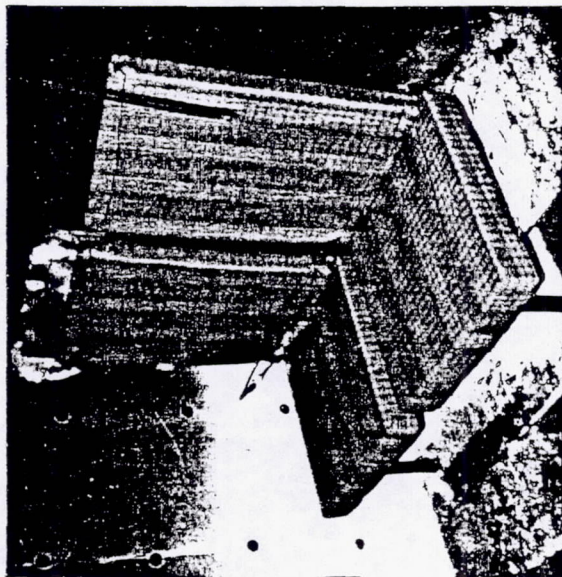


Figure A.1. Seat No. 1

NASA SEAT TESTS

November 19 26, 1980

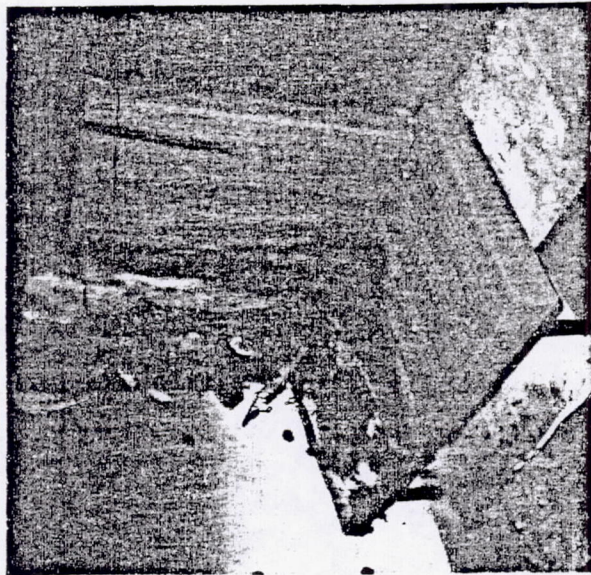
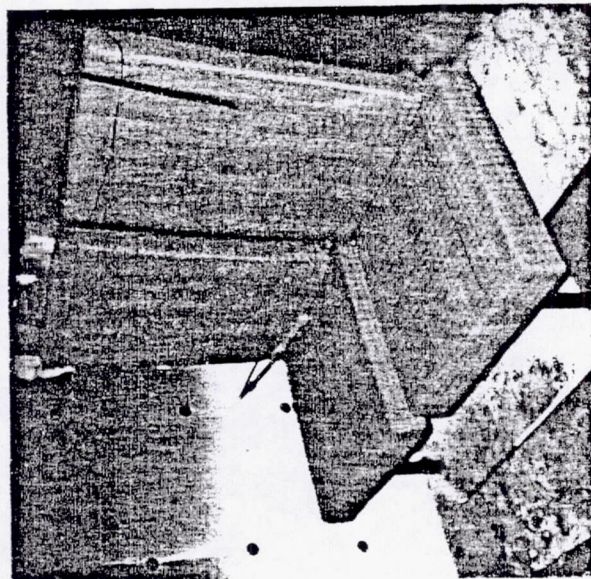


Figure A.2. Seat No. 2

NASA SEAT TESTS

November 19 - 26, 1980

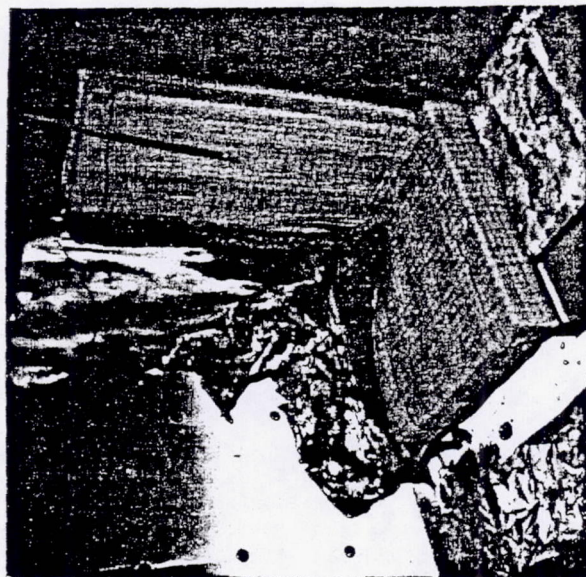
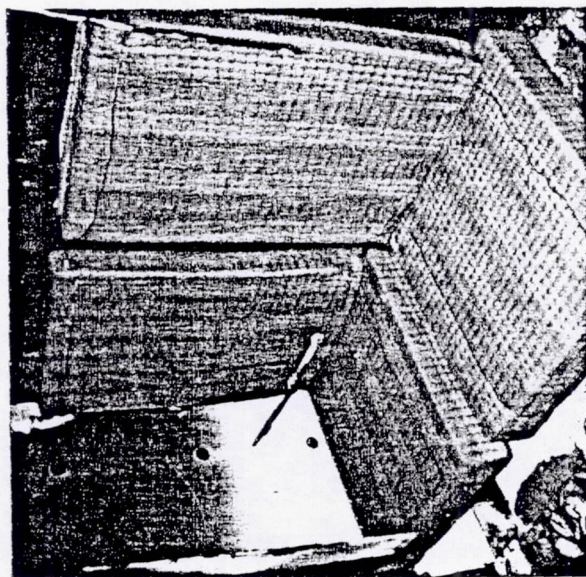


Figure A.3. Seat No. 3

NASA SEAT TESTS

November 19 - 26, 1980

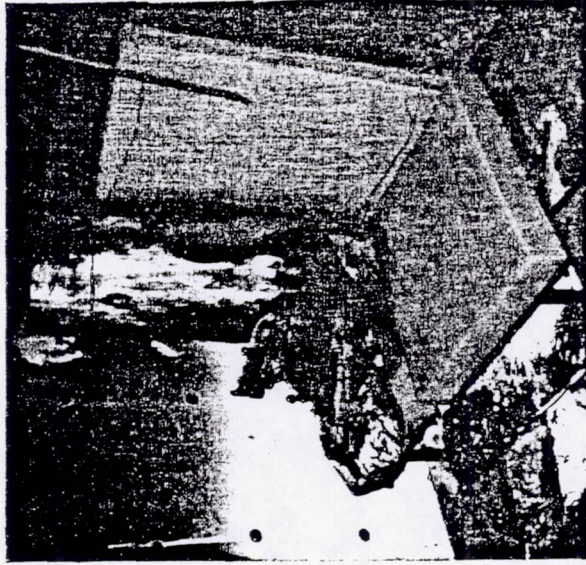
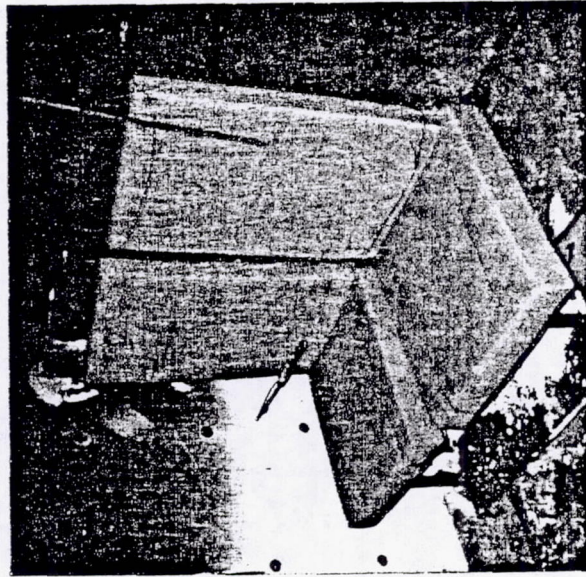


Figure A.4. Seat No. 4

NASA SEAT TESTS

November 19 - 26, 1980

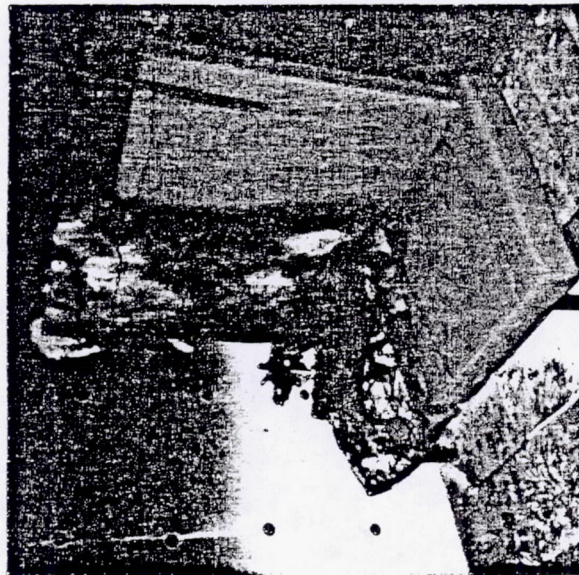
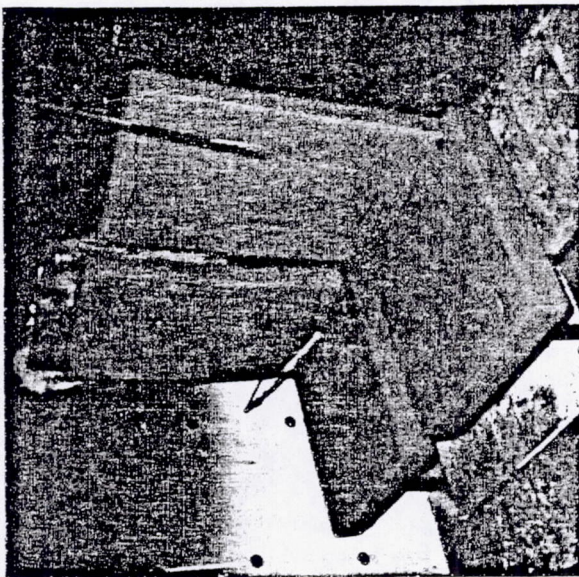


Figure A.5. Seat No. 5

NASA SEAT TESTS

November 19 - 26, 1980

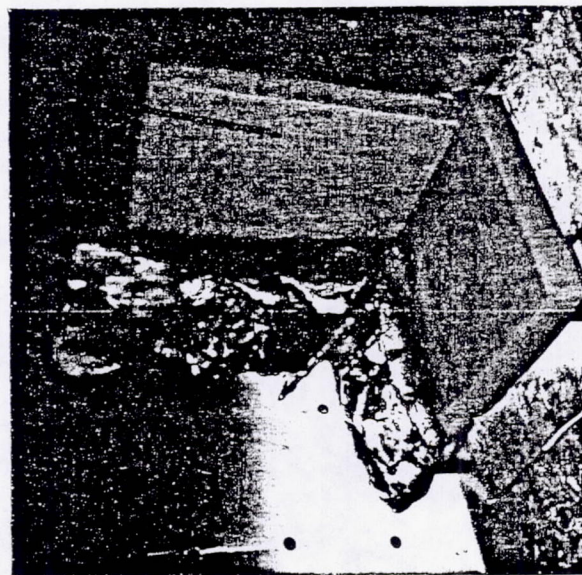
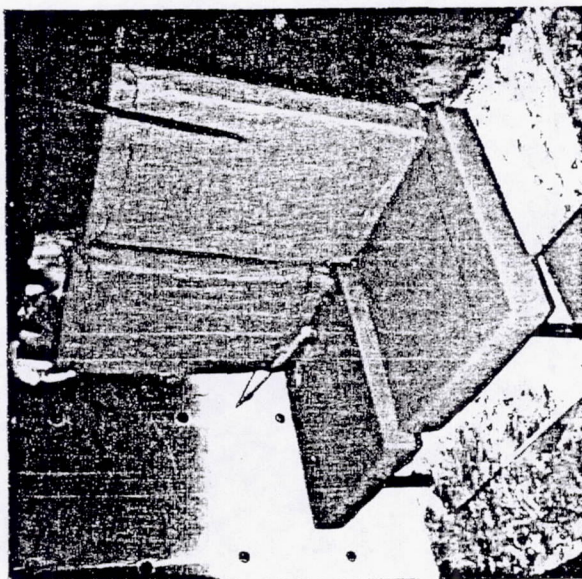


Figure A.6. Seat No. 6

NASA SEAT TESTS

November 19 - 26, 1980

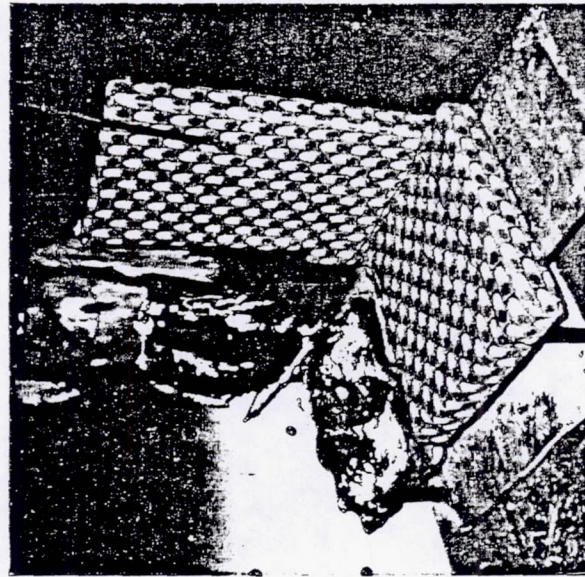
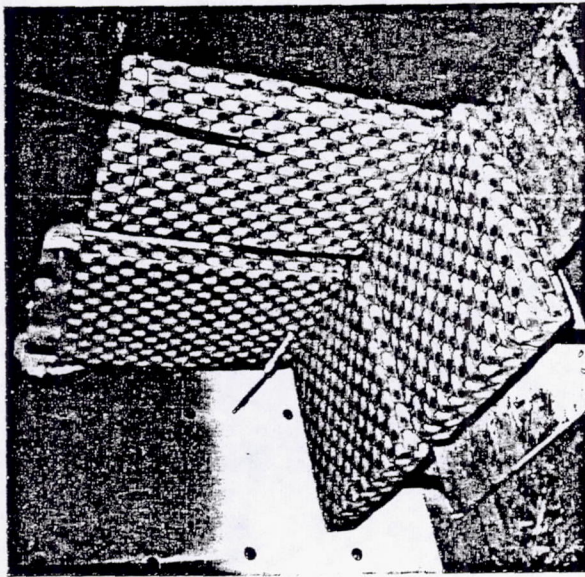


Figure A.7. Seat No. 7

NASA SEAT TESTS

November 19 - 26, 1980

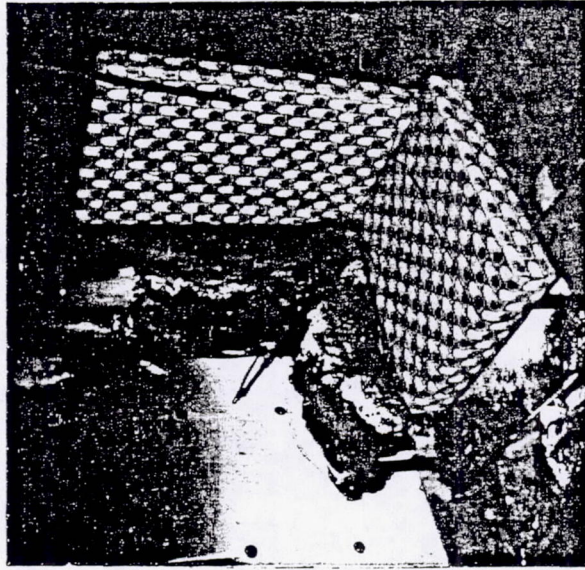
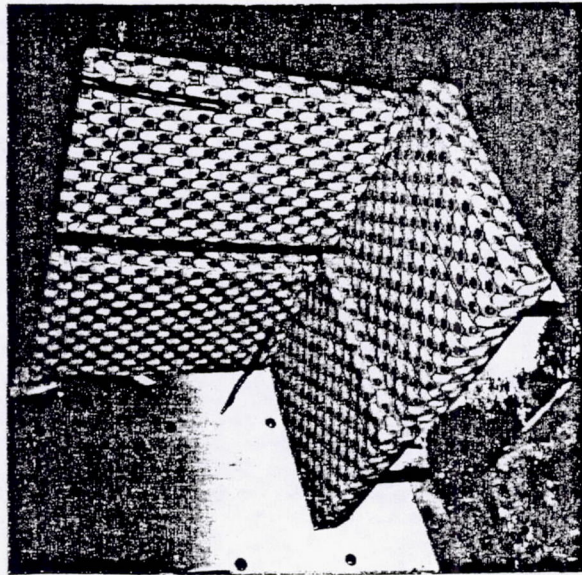


Figure A.8. Seat No. 8

NASA SEAT TESTS

November 19 - 26, 1980

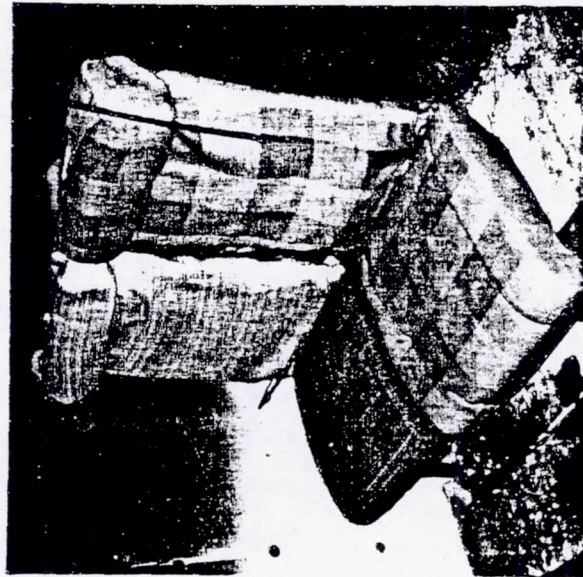


Figure A.9. Seat No. 9

APPENDIX B

CALIBRATION

APPENDIX B

CALIBRATION

Calibration of the room calorimeter has been described in the text. The development of the multiple linear equation which describes rate of heat release as a function of thermocouple response is described in Reference 1. The interrelationship of the thermocouple outputs, and the constants developed for use in this study are listed below.

The multiple linear equation was of the form:

$$Y = A_0 + A_1 X_1 + A_2 X_2 + A_3 X_3 + A_4 X_4 + A_5 X_5 + A_6 X_6. \quad (1)$$

"Y" was rate of heat release. The X's were comprised of the same combinations of thermocouple responses as that used by Fitzgerald.¹ However, several other variations were tried before settling on these. The X's are listed below; T is temperature above ambient in °F, \dot{T} is the rate of rise of temperature (i.e., $\Delta T/\Delta t$ for a time segment Δt).

$$X_1 = T \text{ (stack)}$$

$$X_2 = T^2 \text{ (stack)}$$

$$X_3 = \Sigma T \text{ (walls and ceiling)}$$

$$X_4 = \Sigma \dot{T} \text{ (walls and ceiling)}$$

$$X_5 = \Sigma T^2 \text{ (walls and ceiling)}$$

$$X_6 = \Sigma T\dot{T} \text{ (walls and ceiling)}$$

The sums of the temperature terms were "weighted" to attempt to account for the geometric shape of the room and the location of the thermocouples. Thus,

$$\Sigma T = \left[\frac{T(1) + T(5)}{2} + T(2) + T(3) \right] * 4/3 + \left[\frac{T(6) + T(7)}{2} \right], \quad (2)$$

where T(1) was the average temperature of the walls at 6 in. from the floor, T(2) was 3 ft from the floor, T(3) was 6 ft, T(5) was 8 ft 9 in.,

and T(6) and T(7) were in the ceiling. The other sums were calculated similarly. The stack temperature was the average of the thermocouples in the stack.

The rates of heat release used in the multiple linear regression analysis are listed in Table B-I. Arbitrarily, the first five minutes of each step change in propane flow rate were ignored (in an effort to use "equilibrium" values). For each 10-minute segment, 40 Y's and 40 sets of six X's (one value every 15 seconds) were input into the computer program. The values $Y = 0$ and all $X's = 0$ were also entered and weighted to the equivalent of 40 points.

The results of the multiple linear regression analysis were as follows:

$$A_0 = -9.277 \text{ (Btu/min.)}$$

$$A_1 = 15.88$$

$$A_2 = 0.01476$$

$$A_3 = -4.627$$

$$A_4 = -0.9186$$

$$A_5 = -0.002395$$

$$A_6 = 0.01312$$

$$\text{Coefficient of Multiple Determination} = 0.99623$$

$$\text{Coefficient of Correlation} = 0.99811$$

$$\text{Standard Error of Estimate} = 152.4$$

The fit of the data was very good, based on the coefficients of determination and correlation and the standard error. The A_0 term was very small (the Y's ranged from 4280 to 8570). The temperatures of the stack (X_1 and X_2) were very significant. The negative constants for the temperatures of the walls reflect systematic heat losses through the walls.

For the "unknown" samples, rate of heat release was calculated using equation (1), with the constants listed above. The thermocouple responses were treated exactly like the calibration data [i.e., using equation (2)]. The combinations of temperatures are listed in Appendix C along with the calculated rates of heat release for each test run.

TABLE B-I. CALIBRATION DATA - PROPANE

<u>Time (min.)</u>	<u>Propane Flow Rate, cfm</u>	<u>RHR, Btu/min.</u>	<u>RHR, kW</u>	<u>Calculated RHR kW \pm S.D.</u>	<u>Apparent Error, Percent</u>
0-15	1.8	4280	75.2	76.8 \pm 1.1	+2
15-30	2.4	5710	100	95.7 \pm 1.1	-5
30-45	3.0	7140	126	127 \pm 1.5	+2
45-60	3.6	8570	151	151 \pm 2.7	<1
60-75	3.0	7140	126	124 \pm 1.4	-1
75-90	2.4	5710	100	99.1 \pm 1.2	-1
90-105	1.8	4280	75.2	78.3 \pm 0.8	+4

APPENDIX C
HEAT RELEASE DATA

PAGE 1

DATA FILE = USEATSI

TIME	RIR KW	ENERGY BT	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES	
							TEMP RISE WALLS & CEILING	TEMP SQD WALLS & CEILING
0.25	0.0	0.00	1.8	3.2	1.0	1190.2	-370.1	15.0
0.50	0.0	0.01	2.7	7.2	-1.3	6.6	-4.3	11.0
0.75	0.0	0.01	3.6	12.9	9.7	7.8	25.7	31.0
1.00	0.5	0.02	2.2	5.0	-0.2	-3.6	24.3	19.7
1.25	0.9	0.03	4.9	24.3	3.1	4.5	25.7	23.5
1.50	11.9	0.21	45.2	2044.8	6.3	39.4	145.0	60.0
1.75	35.6	0.75	130.9	17137.4	42.8	128.1	1442.9	546.3
2.00	62.5	1.60	211.5	44744.9	76.9	136.5	2054.1	1566.7
2.25	70.5	2.86	258.8	66977.4	118.2	129.5	3059.9	3506.8
2.50	86.4	4.16	281.5	79236.6	139.3	120.1	4120.5	4239.4
2.75	89.3	5.50	294.6	86777.4	174.9	106.7	4581.9	7571.0
3.00	93.8	6.90	309.0	95487.2	197.6	99.6	4659.6	9600.8
3.25	94.1	8.32	313.5	98288.5	219.7	79.4	3983.0	11683.8
3.50	91.5	9.69	310.4	96323.3	234.8	60.5	3143.9	13206.9
3.75	88.5	11.02	305.4	93275.3	244.4	56.4	3014.0	14251.3
4.00	87.6	12.33	303.6	92185.1	247.7	40.0	2121.1	14642.4
4.25	86.2	13.62	304.1	92452.5	265.0	51.1	2793.1	16443.6
4.50	87.1	14.93	307.2	94304.1	271.4	52.6	2944.9	17179.2
4.75	91.3	15.30	317.6	100838.0	275.7	53.3	3122.9	17732.0
5.00	96.6	17.75	335.0	112251.8	305.9	67.0	4348.9	21363.0
5.25	101.6	19.27	347.6	120798.0	314.8	62.3	4131.4	22556.9
5.50	104.7	20.84	357.4	127720.5	331.3	74.7	5306.8	24062.3
5.75	105.4	22.43	363.2	131899.7	355.1	77.2	5805.6	28285.8
6.00	107.3	24.03	368.1	135460.8	359.6	54.2	4241.2	29092.5
6.25	102.7	25.58	362.7	131573.1	384.2	71.4	5600.4	32804.3
6.50	95.2	27.02	351.6	123608.5	399.0	59.2	4750.0	35109.9
6.75	87.0	28.32	333.7	111355.7	410.0	25.7	2221.6	36927.7
7.00	79.1	29.51	314.4	98853.6	401.7	2.9	260.5	35594.8
7.25	72.1	30.59	297.3	88399.2	395.6	2.3	103.9	34573.0
7.50	65.0	31.57	282.4	79755.4	402.6	-7.5	-747.3	35628.6
7.75	69.1	32.47	270.2	73002.6	491.2	-5.8	-494.4	35424.9
8.00	55.5	33.30	259.3	67236.5	401.7	-7.0	-578.6	35484.7
8.25	51.6	34.07	249.3	62145.5	398.5	-12.7	-1274.6	34839.6
8.50	48.3	34.80	239.3	57259.7	389.7	-8.4	-707.1	33412.4
8.75	45.1	35.48	231.7	53675.6	391.9	-8.9	-928.5	33050.6
9.00	41.6	36.10	222.7	49590.8	391.6	-10.3	-546.7	33718.2
9.25	38.7	36.68	214.6	46070.3	388.1	-14.1	-1360.0	33023.3
9.50	35.8	37.22	206.6	42696.0	385.8	-9.3	-768.7	32636.9
9.75	33.3	37.72	200.0	39902.0	384.6	-13.6	-1164.9	32399.4
10.00	30.4	38.17	193.8	37562.3	391.5	0.6	-109.3	30301.5
10.25	28.8	38.60	186.7	34868.1	378.3	-16.8	-1462.7	31252.0
10.50	26.0	39.00	180.6	32629.0	384.8	-9.9	-740.7	32255.0
10.75	24.8	39.37	174.0	30272.5	370.6	-21.1	-1702.4	30033.8
11.00	22.5	39.71	168.8	28483.3	374.9	-9.3	-708.7	30577.3
11.25	20.6	40.01	160.9	25882.4	363.9	-17.4	-1386.5	28982.1
11.50	19.3	40.30	155.1	24361.0	359.3	-18.2	-1394.0	28290.6
11.75	17.9	40.57	152.6	23295.9	361.1	-19.7	-1649.2	28414.1

DATA FILE = NSEATSL

TIME	AIR KW	ENERGY KJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING
12.00	17.1	40.83	147.8	21850.8	351.0	-22.7	-1724.1	26901.7	
12.25	15.3	41.06	141.7	20090.2	345.7	-17.4	-1279.9	26252.1	
12.50	14.6	41.28	138.7	19237.7	342.0	-10.5	-1423.6	25520.2	
12.75	12.9	41.47	134.0	17942.6	342.7	-15.1	-1040.2	25600.7	
13.00	12.4	41.66	130.5	17017.2	334.1	-16.5	-1258.0	24354.2	
13.25	11.5	41.83	125.7	15792.9	326.8	-20.1	-1367.9	23363.2	
13.50	11.0	41.99	121.7	14810.2	316.5	-23.2	-1691.1	21918.7	
13.75	9.9	42.14	119.2	14199.1	319.3	-7.0	-400.6	22282.9	
14.00	8.8	42.27	117.1	13790.7	323.2	-20.1	-1436.0	22711.9	
14.25	8.1	42.39	114.0	13000.6	320.0	-12.8	-925.4	22246.7	
14.50	7.5	42.51	110.5	12219.1	313.6	-16.8	-1178.6	21366.2	
14.75	7.8	42.62	106.6	11352.9	294.5	-22.4	-1441.6	18905.1	
15.00	6.6	42.72	104.0	10811.8	297.8	-5.0	-285.1	19374.3	
15.25	6.0	42.81	101.8	10371.4	297.1	-20.9	-1335.6	19236.8	
15.50	6.0	42.90	98.3	9664.9	283.4	-18.9	-1341.7	17500.5	
15.75	5.2	42.98	95.7	9164.2	283.0	-10.5	-471.6	17517.4	
16.00	4.7	43.05	93.1	8671.3	278.9	-16.3	-975.2	17025.7	
16.25	5.2	43.13	90.9	8262.8	265.4	-18.4	-1073.3	15500.1	
16.50	4.2	43.19	89.2	7960.2	269.9	-17.5	-1051.1	15932.8	
16.75	4.3	43.26	88.8	7881.9	266.9	-12.2	-713.1	15567.9	
17.00	3.8	43.32	88.0	7735.2	270.2	-4.7	-259.9	15920.2	
17.25	3.8	43.37	85.3	7277.8	260.6	-20.3	-1099.4	14889.3	
17.50	3.7	43.43	84.9	7206.3	259.5	-13.7	-962.9	14635.8	
17.75	3.0	43.47	84.5	7141.9	266.9	-5.9	-113.8	15516.9	
18.00	3.4	43.52	81.4	6626.0	249.9	-23.2	-1438.6	13612.2	
18.25	3.3	43.57	80.1	6416.0	247.1	-11.1	-514.7	13352.9	
18.50	2.2	43.61	77.5	6009.4	249.7	-7.9	-385.3	13606.4	
18.75	3.0	43.65	76.6	5869.1	237.2	-22.8	-1171.3	12346.4	
19.00	2.9	43.69	75.3	5670.1	233.8	-13.7	-686.5	11998.2	
19.25	2.3	43.73	74.9	5614.5	239.6	-12.6	-597.8	12548.8	
19.50	1.6	43.75	73.2	5358.2	240.3	-6.4	-402.6	12562.5	
19.75	2.1	43.78	72.8	5292.6	233.1	-19.9	-1015.9	11833.3	
20.00	2.2	43.82	72.3	5230.2	230.5	-10.2	-468.3	11592.5	
20.25	1.2	43.83	70.6	4985.8	235.9	-5.2	-223.4	12101.8	
20.50	2.2	43.87	67.0	4490.3	210.9	-19.5	-912.7	9015.0	
20.75	1.2	43.89	68.9	4740.3	228.9	0.3	19.6	11392.8	
21.00	1.7	43.91	66.2	4381.1	214.0	-23.7	-1139.3	10006.3	
21.25	1.9	43.94	64.0	4090.9	203.3	-6.7	-270.9	9117.0	
21.50	1.3	43.95	64.5	4155.1	212.4	-8.5	-256.9	9320.3	
21.75	1.3	43.98	64.0	4098.6	209.7	-10.8	-616.5	9607.5	
22.00	0.7	43.99	62.7	3936.3	213.1	-4.6	-195.4	9084.6	
22.25	1.1	44.01	61.8	3824.2	205.5	-12.4	-455.6	9273.6	
22.50	1.1	44.02	60.5	3662.7	200.2	-12.2	-671.8	8744.3	
22.75	1.0	44.04	60.1	3612.0	199.7	-10.8	-451.1	8590.3	
23.00	0.3	44.04	59.7	3564.1	206.2	-9.7	-382.1	9258.0	
23.25	0.8	44.05	57.5	3302.8	192.6	-18.7	-805.8	8124.9	
23.50	0.6	44.06	57.9	3357.0	195.1	-3.8	-105.0	8116.7	

DATA FILE = NSEATS1

TIME	HHR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUAREFO	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES	
							TEMP RISE WALLS & CEILING	TEMP SOD WALLS & CEILING
23.75	0.9	44.08	56.2	3153.9	187.3	17.3	-709.0	7702.0
24.00	0.1	44.08	55.3	3060.3	192.8	-5.0	-187.8	8118.7
24.25	0.8	44.09	55.3	3058.1	184.6	-15.0	-642.2	7451.0
24.50	0.6	44.10	54.0	2914.9	182.1	-9.9	-401.4	7245.8
24.75	0.1	44.10	51.8	2683.2	180.4	-6.8	-194.1	7147.8
25.00	0.9	44.12	52.7	2772.0	173.6	-9.1	-399.7	6617.2
25.25	0.7	44.13	53.1	2822.8	178.3	-8.5	-345.3	6920.8
25.50	1.0	44.14	51.3	2635.8	160.7	-11.2	-375.4	6259.2
25.75	0.4	44.15	50.5	2549.2	171.9	-5.3	-209.1	6456.4
26.00	0.3	44.15	49.6	2461.2	170.3	-6.5	-147.0	6375.0
26.25	0.4	44.16	48.7	2374.6	165.9	-17.3	-591.3	6062.5
26.50	0.7	44.17	48.3	2330.0	160.3	-4.4	-211.4	5656.2
26.75	0.7	44.18	47.0	2204.3	155.3	-11.1	-392.6	5314.7
27.00	0.0	44.18	48.3	2336.8	172.6	-2.7	-5.8	6485.3
27.25	0.7	44.19	46.1	2122.4	152.3	-9.4	-363.8	5122.5
27.50	0.1	44.19	45.7	2085.7	158.3	-11.8	-346.7	5505.7
27.75	0.2	44.19	45.7	2085.7	156.7	-6.5	-122.1	5436.9
28.00	0.2	44.20	45.2	2046.7	155.3	-5.9	-304.0	5278.6
28.25	0.2	44.20	44.4	1967.8	152.8	-10.0	-314.0	5113.3
28.50	0.0	44.20	42.6	1814.8	152.0	-3.2	-83.0	5067.1
28.75	0.1	44.20	42.6	1813.9	147.4	-9.2	-222.4	4813.3
29.00	0.4	44.21	43.0	1851.6	144.9	-9.9	-392.5	4613.6
29.25	0.1	44.21	41.3	1702.4	141.6	-4.4	-112.4	4426.5
29.50	0.4	44.21	41.7	1739.7	141.3	-10.3	-319.7	4393.2
29.75	0.1	44.22	40.8	1667.1	140.5	-3.2	-99.7	4343.0
30.00	0.0	44.22	38.6	1491.5	136.7	-5.9	-130.6	4134.6
30.25	0.0	44.22	38.2	1457.7	135.4	-5.3	-137.7	4065.0
30.50	0.0	44.22	37.3	1391.3	134.1	-5.3	-171.3	3978.7
30.75	0.6	44.22	36.4	1323.5	119.9	-11.8	-344.2	3824.4
31.00	0.0	44.22	37.8	1425.1	133.1	-1.2	39.5	3919.4
31.25	0.0	44.22	37.8	1426.6	139.2	-2.4	-98.0	4235.3
31.50	0.1	44.23	35.5	1261.7	122.2	-14.1	-387.8	3319.5
31.75	0.0	44.23	36.9	1360.9	136.1	1.8	75.6	4045.5
32.00	0.0	44.23	35.1	1231.3	122.0	-11.5	-348.2	3202.0
32.25	0.0	44.23	35.6	1263.8	127.1	2.3	159.6	3577.3
32.50	0.0	44.23	35.6	1265.2	131.7	-8.3	-229.3	3810.6
32.75	0.0	44.23	34.7	1202.0	122.8	-9.1	-190.0	3368.4
33.00	0.2	44.23	35.1	1232.0	118.5	-7.9	-293.4	3100.5
33.25	0.0	44.23	32.9	1082.4	116.4	-8.6	-170.1	3013.6
33.50	0.0	44.23	32.9	1083.1	119.3	2.6	63.4	3150.5
33.75	0.2	44.23	34.2	1171.7	116.9	-9.7	-240.1	3022.2
34.00	0.2	44.24	32.5	1053.0	110.2	-8.8	-192.7	2715.9
34.25	0.0	44.24	32.9	1083.1	117.0	0.5	60.0	3048.3
34.50	0.4	44.24	31.6	996.0	105.0	-12.1	-332.8	2469.4
34.75	0.0	44.24	31.1	969.7	112.2	1.5	83.2	2795.8
35.00	0.3	44.25	30.2	913.2	101.1	-8.3	-199.3	2302.7
35.25	0.0	44.25	31.1	969.7	110.4	1.2	79.1	2714.9

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DATA FILE = NSEATS.1

TIME	AIR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES TEMP RISE WALLS & CEILING	TEMP SQR WALLS & CEILING
35.50	0.0	44.25	30.7	942.5	109.7	-2.7	-54.2	2686.8
35.75	0.0	44.25	30.7	943.1	109.7	-0.9	-19.0	2686.8
36.00	0.0	44.25	30.7	943.1	110.9	-4.1	-134.3	2716.3
36.25	0.0	44.25	29.8	889.2	104.3	-0.6	-219.1	2496.4
36.50	0.4	44.25	28.5	810.0	97.4	-7.7	-142.8	1974.1
36.75	0.0	44.25	28.5	812.3	107.9	4.2	96.8	2550.7
37.00	0.0	44.25	28.9	836.9	101.3	-0.6	-139.6	2292.6
37.25	0.0	44.25	27.6	761.8	90.3	-3.0	-24.3	2187.9
37.50	0.0	44.25	27.6	761.8	97.0	-5.3	-185.4	2085.0
37.75	0.0	44.25	28.1	787.4	101.0	1.5	118.2	2314.9
38.00	0.0	44.25	27.2	737.7	97.0	-1.4	-81.1	2090.2

DATA FILE = NSE0TSE

TIME	PIR KW	ENERGY KJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP SDO WALLS & CEILING
0.25	0.0	0.00	4.5	20.2	13.9	1207.4	3377.1	43.1	
0.50	0.0	0.00	6.7	45.4	22.6	-1.2	-2.8	194.1	
0.75	0.0	0.00	4.9	24.4	18.0	-0.3	7.2	69.5	
1.00	0.0	0.00	4.5	20.2	15.6	-0.9	-0.2	52.2	
1.25	0.5	0.01	5.8	34.0	11.3	0.9	21.2	32.0	
1.50	6.8	0.11	28.9	837.5	10.3	32.0	79.5	30.5	
1.75	19.5	0.40	77.6	6026.4	34.3	51.1	375.7	252.7	
2.00	32.6	0.89	122.3	14962.2	52.8	73.9	910.8	615.0	
2.25	46.7	1.59	167.5	28059.7	75.1	80.3	1361.3	1248.3	
2.50	58.2	2.47	204.0	41620.1	100.4	101.3	2335.7	2263.0	
2.75	67.4	3.48	230.8	53254.8	117.3	94.4	2536.8	3134.8	
3.00	73.5	4.58	251.1	63031.1	145.2	84.9	2769.5	4743.2	
3.25	77.1	5.74	263.3	69348.0	164.4	76.5	2880.7	6097.6	
3.50	79.0	6.92	272.0	73962.2	185.9	77.2	3377.1	7841.2	
3.75	79.8	8.12	275.6	75949.8	195.2	64.3	2713.3	8646.8	
4.00	80.9	9.33	282.4	79732.8	217.6	53.4	2490.9	10573.5	
4.25	82.9	10.58	289.2	83613.5	227.7	67.4	3375.1	11517.3	
4.50	87.5	11.89	300.9	90540.8	234.0	61.4	3216.2	12365.1	
4.75	88.2	13.21	307.7	94654.7	260.8	71.2	4090.3	15195.1	
5.00	90.0	14.56	312.6	97725.0	266.1	56.9	3280.4	15050.2	
5.25	88.8	15.89	314.9	99136.8	291.4	65.4	3886.2	18721.6	
5.50	86.6	17.19	312.6	97725.0	305.5	56.2	3486.6	20418.4	
5.75	85.5	18.47	312.2	97443.9	316.3	52.5	3355.1	21782.2	
6.00	83.1	19.72	310.4	96323.3	335.0	74.6	4901.2	24158.8	
6.25	78.3	20.89	302.3	91355.1	350.0	60.2	4101.1	26194.5	
6.50	72.8	21.99	291.9	85188.1	361.6	37.5	2785.9	27070.6	
6.75	67.1	22.99	279.2	77958.2	365.3	5.6	335.3	28358.4	
7.00	60.3	23.90	262.9	69111.2	364.6	6.3	555.7	28307.3	
7.25	54.3	24.71	250.1	62555.0	373.3	-1.4	-172.1	29548.4	
7.50	49.9	25.46	236.6	55993.8	360.7	-5.3	-283.6	27745.0	
7.75	45.7	26.15	223.6	49992.5	348.8	-11.6	-850.5	26031.6	
8.00	41.7	26.77	214.7	46078.9	354.2	-14.5	-1130.9	26730.6	
8.25	38.0	27.34	205.8	42349.5	357.2	-14.8	-1194.1	27093.0	
8.50	34.3	27.86	196.5	38624.0	359.6	-8.4	-666.9	27406.0	
8.75	31.6	28.33	185.9	34562.5	344.8	-14.3	-948.6	25331.9	
9.00	29.5	28.77	177.1	31360.9	331.3	-18.0	-1146.5	23521.2	
9.25	27.4	29.18	171.0	29237.6	333.3	-19.1	-1508.6	23663.2	
9.50	24.4	29.54	163.6	26758.4	332.7	-11.4	-737.4	23591.4	
9.75	22.0	29.88	157.1	24671.0	332.4	-19.2	-1384.8	22496.2	
10.00	20.4	30.18	149.6	22392.1	325.5	-9.6	-566.1	22615.0	
10.25	18.3	30.45	144.0	20733.1	321.5	-15.7	-1077.4	22072.5	
10.50	17.5	30.71	139.2	19373.9	312.1	-19.7	-1362.8	20005.0	
10.75	15.9	30.95	133.1	17712.9	305.6	-17.2	-1088.3	19976.6	
11.00	14.4	31.17	127.4	16241.0	300.5	-11.3	-791.0	19302.8	
11.25	12.7	31.36	122.7	15052.8	300.9	-7.3	-422.2	19350.0	
11.50	12.1	31.54	120.5	14529.9	299.2	-15.6	-1015.6	19118.1	
11.75	11.7	31.71	117.9	13909.8	294.3	-19.8	-1270.3	18467.0	

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DATA FILE = NSEATSP

TIME	AIR PM	ENERGY KJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES	
							TEMP RISE WALLS & CEILING	TEMP SQR WALLS & CEILING
12.00	11.1	31.80	114.4	13095.5	285.9	-11.7	-745.8	12067.1
12.25	9.4	32.02	110.6	12230.1	291.7	-7.5	-327.7	10177.9
12.50	8.0	32.15	100.0	11664.0	289.1	-19.6	-1178.4	17847.1
12.75	8.5	32.28	104.5	10914.0	278.0	-8.4	-477.5	16576.4
13.00	7.7	32.40	102.0	10561.7	288.5	-7.9	-557.1	16790.7
13.25	7.9	32.52	101.5	10296.2	274.9	22.5	1297.6	16137.0
13.50	7.5	32.63	99.7	9946.1	271.9	-12.0	-682.1	15793.0
13.75	6.4	32.73	97.6	9527.7	276.1	-10.4	-669.5	16120.6
14.00	6.3	32.82	96.3	9275.6	273.4	-10.9	-689.8	15873.5
14.25	5.9	32.91	91.9	8443.8	260.9	-4.9	-177.1	14577.3
14.50	5.5	32.99	91.1	8291.9	262.4	-11.7	-681.9	14767.8
14.75	5.0	33.08	90.6	8210.2	256.8	-13.7	-697.8	14120.7
15.00	6.1	33.17	90.2	8128.8	251.6	-11.6	-681.7	13544.6
15.25	5.9	33.26	89.3	7974.5	251.3	-10.2	-524.6	13504.4
15.50	5.4	33.34	87.1	7591.6	248.7	-10.2	-511.8	13241.0
15.75	5.6	33.42	85.4	7286.3	239.3	-11.1	-494.0	12333.2
16.00	5.7	33.51	87.2	7595.9	245.9	-18.4	-1054.3	12896.0
16.25	5.3	33.59	85.4	7298.3	243.4	-9.7	-501.0	12643.7
16.50	4.4	33.65	82.8	6862.5	243.8	-7.6	-330.2	12092.3
16.75	4.2	33.72	82.0	6719.1	242.5	-5.3	-292.8	12543.0
17.00	4.7	33.79	81.1	6572.3	233.9	-16.4	-816.8	11692.5
17.25	4.5	33.86	80.2	6433.6	232.7	-13.7	-701.8	11549.7
17.50	4.3	33.92	78.5	6157.5	229.0	-14.9	-731.2	11180.1
17.75	3.8	33.98	76.8	5899.6	228.3	-11.7	-564.2	11101.7
18.00	3.1	34.02	74.6	5563.7	228.7	-7.6	-309.3	11140.1
18.25	2.9	34.07	72.8	5304.2	224.6	-7.4	-323.3	10779.9
18.50	3.2	34.11	70.6	4982.9	212.9	-10.6	-460.2	9750.7
18.75	3.3	34.16	72.4	5249.3	217.7	-16.9	-868.9	10092.5
19.00	2.9	34.21	70.7	4991.4	215.8	-7.6	-358.3	9912.3
19.25	2.2	34.24	68.5	4690.9	216.2	-7.4	-220.2	9988.8
19.50	2.5	34.28	66.3	4389.1	205.2	-8.2	-367.5	9049.2
19.75	2.6	34.32	67.6	4569.8	200.2	-15.0	-717.0	9237.5
20.00	2.1	34.35	66.3	4395.7	209.0	5.9	-240.7	9302.1
20.25	2.2	34.38	65.0	4222.4	203.5	-12.9	-555.5	8834.6
20.50	2.0	34.41	63.7	4053.9	201.1	-9.4	-417.0	8624.6
20.75	2.2	34.45	63.7	4053.9	199.2	-7.9	-343.1	8450.7
21.00	2.1	34.48	62.8	3943.8	196.4	-10.9	-470.9	8212.5
21.25	1.7	34.50	61.9	3836.6	197.6	-4.4	-140.9	8315.4
21.50	1.9	34.53	61.1	3727.1	193.1	-8.8	-331.7	7967.1
21.75	1.8	34.56	58.4	3409.4	184.2	-8.9	-247.9	7328.0
22.00	1.6	34.58	56.6	3207.0	180.3	-6.4	-302.4	7010.1
22.25	1.2	34.60	58.0	3364.0	189.6	-7.9	-338.1	7574.9
22.50	1.3	34.62	56.2	3169.7	181.4	5.9	-219.4	7061.4
22.75	1.2	34.64	55.8	3112.5	182.0	6.4	-224.7	7082.1
23.00	0.9	34.65	55.4	3066.9	183.8	-10.9	-394.4	7211.1
23.25	0.8	34.67	54.1	2921.4	179.6	-7.7	-275.3	6907.2
23.50	1.0	34.68	54.9	2920.3	176.9	-2.1	-81.9	6704.1

DATA FILE = NSEAT1S2

TIME	AIR KW	ENERGY BT	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING
23.75	0.7	34.69	53.2	2829.2	179.6	-11.1	-392.8	6025.0
24.00	1.3	34.71	51.8	2684.3	195.9	-5.9	-186.1	5217.4
24.25	1.4	34.73	52.0	2731.1	166.6	-5.8	-247.0	5972.0
24.50	1.5	34.75	52.3	2731.1	164.1	-10.0	-349.6	5794.6
24.75	1.9	34.78	53.6	2873.0	165.9	-10.8	-413.6	5003.5
25.00	0.0	34.80	51.9	2690.5	171.0	2.3	109.7	6233.3
25.25	1.2	34.81	51.4	2643.0	165.3	-5.0	-160.2	5844.2
25.50	1.4	34.84	50.1	2506.0	157.8	-2.9	-60.9	5370.1
25.75	1.7	34.86	51.9	2689.5	162.7	-16.2	-600.1	5648.7
26.00	1.1	34.88	52.8	2786.8	171.2	2.0	-95.0	6291.5
26.25	1.9	34.91	50.5	2551.3	154.3	-4.8	-33.9	5144.7
26.50	1.5	34.93	50.6	2555.3	159.2	-7.3	-313.7	5408.3
26.75	1.5	34.95	51.0	2601.0	160.2	-5.0	-159.3	5471.9
27.00	1.6	34.98	51.5	2640.1	161.8	-11.5	-397.0	5561.3
27.25	1.0	34.99	49.7	2470.1	161.9	0.3	47.3	5582.7
27.50	1.4	35.01	51.0	2604.1	162.2	-7.9	-306.8	5572.9
27.75	1.6	35.03	50.1	2513.0	156.1	-6.5	-204.6	5182.0
28.00	1.9	35.05	48.8	2379.5	148.1	-4.7	-154.5	4690.5
28.25	2.1	35.09	47.9	2292.5	142.4	-5.0	-171.8	4340.2
28.50	2.1	35.13	47.9	2292.5	141.7	-2.6	-85.2	4297.1
28.75	1.4	35.15	46.6	2169.7	144.6	2.6	127.2	4485.5
29.00	1.4	35.17	45.7	2088.5	143.1	-6.2	-165.5	4401.1
29.25	1.5	35.19	48.8	2384.4	152.3	-7.9	-294.7	4920.1
29.50	1.7	35.22	47.0	2212.8	143.8	-7.1	-218.1	4407.1
29.75	1.2	35.23	46.2	2131.7	146.1	0.3	40.3	4553.1
30.00	1.2	35.25	44.8	2009.7	141.2	-1.8	-17.5	4200.3
30.25	1.5	35.28	45.3	2049.4	139.5	-6.7	-215.0	4170.5
30.50	1.9	35.31	45.3	2048.5	135.0	-9.1	-259.9	3909.7
30.75	1.8	35.33	45.3	2049.4	136.0	-5.0	-156.1	3949.5
31.00	1.5	35.36	45.3	2051.2	139.7	-3.3	-91.0	4149.2
31.25	1.4	35.38	43.5	1893.1	134.2	-3.8	-35.9	3881.9
31.50	1.5	35.40	43.5	1893.1	133.6	-2.4	-87.3	3836.9
31.75	1.9	35.43	43.1	1853.3	127.3	7.3	-210.2	3486.1
32.00	1.8	35.46	44.4	1971.4	132.7	-5.3	-164.3	3755.0
32.25	1.5	35.48	43.1	1855.9	132.1	-2.3	-64.7	3719.9
32.50	1.0	35.49	43.6	1897.5	139.8	-5.3	-164.8	4125.0
32.75	0.7	35.50	40.9	1672.0	132.8	-0.9	34.5	3773.3
33.00	1.2	35.52	41.3	1707.3	129.1	-6.0	-168.2	3568.5
33.25	0.9	35.54	41.3	1709.0	133.1	-2.1	-67.3	3771.0
33.50	1.3	35.55	38.7	1493.8	119.5	-9.1	-201.7	3094.5
33.75	0.9	35.57	40.5	1637.0	130.0	-3.2	-135.1	3507.5
34.00	0.4	35.57	39.2	1532.7	130.9	-5.3	-62.4	3567.0
34.25	0.9	35.59	39.1	1531.9	125.9	-10.9	-355.3	3063.3
34.50	0.1	35.59	40.1	1605.6	137.2	0.0	23.4	3060.3
34.75	0.3	35.59	37.4	1397.3	125.6	-1.2	-1.6	3561.9
35.00	0.9	35.61	37.4	1396.5	119.7	-14.5	-379.3	3053.8
35.25	0.0	35.61	37.4	1398.8	129.4	2.6	109.1	3546.8

DATA FILE = NSEOT62

TIME	POP MW	ENERGY MJ	STACK TEMP	STACK TEMP SOURCE	TEMP WALLS A CELL ING	TEMP WALLS A CELL ING	TEMP WALLS A CELL ING	TEMP WALLS A CELL ING
35.50	0.1	35.61	36.1	1290.3	123.5	5.7	-142.0	2340.2
36.75	0.3	35.61	36.1	1299.5	120.7	2.1	-49.6	3106.1
36.00	0.0	35.62	35.5	1267.4	114.0	0.0	-220.0	2774.7
36.25	0.0	35.62	33.4	1115.6	117.5	4.7	151.6	2947.9
36.50	0.2	35.63	32.5	1055.6	109.3	5.6	-144.5	2565.7
36.75	0.7	35.64	32.5	1055.0	104.6	9.8	-244.8	2342.0
37.00	0.0	35.64	31.2	971.6	103.6	2.0	109.8	1503.6
37.25	0.5	35.55	31.2	970.3	101.2	6.5	-172.9	2203.1
37.50	0.0	35.65	32.5	1057.6	112.9	-7.4	-173.3	2690.9
37.75	0.0	35.65	30.7	944.9	109.5	4.5	160.0	2569.3
38.00	0.4	35.65	32.1	1027.0	106.4	-12.4	-325.1	2597.1
38.25	0.0	35.65	30.3	917.5	104.5	1.2	63.1	2382.7
38.50	0.0	35.65	31.2	973.4	113.0	-1.0	-56.1	2692.5
38.75	0.3	35.66	27.6	762.3	91.5	-5.3	-29.2	1834.3
39.00	0.1	35.66	29.4	864.4	99.4	-4.1	146.6	2109.0
39.25	0.0	35.65	28.5	812.8	97.9	-5.9	-92.7	2022.1
39.50	0.0	35.66	26.7	715.0	98.7	3.2	92.2	2095.9
39.75	0.2	35.66	25.8	667.2	86.3	-4.7	-72.0	1636.8
40.00	0.0	35.66	28.1	788.5	90.3	-5.9	-141.3	2064.3

DATA FILE = NSEATS4

TIME	RUR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP SQW WALLS & CEILING
0.25	0.0	0.00	6.8	46.0	9.0	944.3	1766.1	31.3
0.50	0.7	0.01	7.2	52.3	15.0	-3.3	-6.2	52.1
0.75	0.6	0.02	7.2	52.3	15.3	1.2	8.1	55.8
1.00	0.3	0.02	7.7	59.1	20.1	1.2	17.3	95.2
1.25	0.6	0.03	8.6	74.0	20.2	0.0	-7.1	90.6
1.50	5.0	0.11	23.9	568.8	18.2	10.6	61.5	78.9
1.75	11.8	0.29	46.9	2199.6	16.9	21.7	101.1	80.7
2.00	19.9	0.58	75.9	5759.3	26.3	28.6	160.2	164.8
2.25	27.9	1.00	105.5	11130.7	44.8	46.6	472.6	449.7
2.50	33.7	1.51	125.0	15625.0	54.4	47.7	571.6	650.4
2.75	39.2	2.10	143.2	20514.8	65.3	43.7	605.3	963.7
3.00	42.3	2.73	154.5	23867.2	75.5	49.7	829.0	1281.2
3.25	45.7	3.43	169.7	28808.3	90.3	50.2	1038.5	1829.5
3.50	53.4	4.23	192.0	36860.2	106.5	73.9	1763.3	2548.6
3.75	63.8	5.19	222.4	49466.2	123.5	77.0	2248.3	3476.9
4.00	66.3	6.18	232.7	54130.7	143.0	77.8	2392.0	4590.4
4.25	66.4	7.18	234.9	55173.3	155.9	51.5	1855.3	5469.7
4.50	67.8	8.20	240.7	57936.5	165.7	57.4	1990.1	6132.1
4.75	68.4	9.22	246.1	60570.1	186.5	47.3	2083.7	7748.4
5.00	68.8	10.26	251.1	63036.1	206.0	50.4	2256.7	9357.5
5.25	70.3	11.31	255.6	65326.2	210.0	52.6	2352.1	9764.9
5.50	69.8	12.36	256.4	65746.1	220.6	42.3	2073.5	10774.0
5.75	69.7	13.40	259.1	67153.5	235.5	50.6	2516.0	12184.0
6.00	69.3	14.44	259.2	67158.7	240.4	37.3	1879.5	12604.1
6.25	66.5	15.44	253.8	64404.3	248.0	39.7	2141.8	13500.8
6.50	62.1	16.37	245.7	60340.8	260.9	33.5	1879.2	11086.6
6.75	57.4	17.23	234.9	55178.0	255.0	16.5	845.2	15303.2
7.00	53.5	18.04	225.1	50661.0	266.0	12.9	747.1	15428.1
7.25	49.2	18.77	214.4	45984.5	267.5	-2.9	-197.0	15565.8
7.50	45.5	19.46	203.3	41347.2	260.0	15.6	782.6	14725.6
7.75	41.5	20.08	196.4	38584.7	276.8	-14.5	-643.2	16587.6
8.00	38.5	20.66	188.6	35558.6	276.6	-10.0	-495.9	16593.3
8.25	35.5	21.19	178.9	31998.1	268.8	5.0	129.2	15652.7
8.50	33.4	21.69	172.3	29701.1	255.7	-12.6	-701.4	15296.8
8.75	30.3	22.15	165.5	27380.3	272.7	-17.1	-819.9	16099.6
9.00	28.5	22.57	156.6	24529.8	255.3	3.0	-1.8	14149.5
9.25	26.3	22.97	150.6	22680.4	257.1	-20.2	-1046.8	14307.3
9.50	24.2	23.33	144.5	20883.1	255.8	3.8	242.7	14104.9
9.75	22.5	23.67	140.3	19670.1	259.0	23.2	-1225.3	14495.6
10.00	20.8	23.98	135.1	18238.5	256.9	-8.5	-400.3	14293.7
10.25	19.1	24.27	129.0	16628.1	251.2	-4.6	-405.3	13625.3
10.50	18.3	24.54	124.1	15400.8	241.6	-2.1	-123.4	12640.9
10.75	16.6	24.79	119.4	14261.1	244.0	-27.1	-1249.1	12886.7
11.00	15.4	25.02	114.6	13135.5	237.2	-8.7	-565.7	12150.4
11.25	14.4	25.24	111.6	12447.9	237.0	-0.9	36.5	12150.0
11.50	13.5	25.44	108.1	11681.3	234.2	-2.3	-220.2	11832.0
11.75	12.7	25.63	105.5	11130.3	234.5	-7.7	-203.0	11910.2

PAGE 2

DATA FILE = NSFAT64

TIME	AIR K/H	ENERGY KJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING
12.00	12.8	25.02	105.1	11035.5	239.6	-6.4	-378.1	11509.4
12.25	12.4	26.01	109.5	11990.1	227.0	23.5	-1110.1	11145.3
12.50	11.3	26.10	101.2	10247.5	234.1	-7.9	-301.9	11700.9
12.75	11.3	26.35	90.1	9625.6	222.2	11.3	-439.7	10730.5
13.00	10.5	26.50	96.0	9208.3	222.7	-7.0	-463.4	10695.5
13.25	10.5	26.66	95.1	9038.3	219.4	-4.1	-183.2	10390.0
13.50	9.7	26.81	92.9	8632.3	220.3	-5.6	-230.2	10468.6
13.75	9.9	26.95	90.7	8221.0	209.6	-6.5	-329.8	9517.5
14.00	9.5	27.10	89.4	7995.9	210.4	-24.2	-972.5	9595.8
14.25	9.1	27.23	87.7	7684.3	206.5	-6.4	-338.6	9235.4
14.50	8.8	27.37	85.4	7459.8	206.1	-10.6	-477.2	9178.0
14.75	8.8	27.50	85.9	7384.0	204.2	-7.6	-302.8	9021.9
15.00	8.1	27.62	84.2	7089.6	205.4	-4.1	-257.0	9074.4
15.25	7.5	27.73	82.5	6804.6	206.1	-6.5	-185.1	9169.3
15.50	7.3	27.84	80.3	6443.3	199.6	-7.9	-448.1	8570.1
15.75	6.6	27.94	79.0	6239.4	203.4	-3.0	-69.6	8900.5
16.00	7.0	28.05	79.0	6236.3	199.4	-6.0	-258.5	8501.1
16.25	7.4	28.16	77.2	5959.8	189.3	-22.4	-912.7	7750.2
16.50	7.0	28.26	76.3	5827.8	189.3	-8.9	-380.1	7730.0
16.75	6.7	28.36	74.6	5563.7	186.6	-10.6	-418.2	7526.2
17.00	6.2	28.45	73.7	5428.7	186.5	17.5	721.3	7508.2
17.25	6.1	28.55	73.7	5426.1	190.7	-10.1	-329.5	7855.8
17.50	6.4	28.64	73.7	5426.1	187.1	-14.5	-593.8	7554.6
17.75	6.3	28.74	71.5	5118.0	181.3	-23.4	-888.1	7003.7
18.00	5.8	28.82	72.1	5191.2	187.6	-11.0	-335.7	7587.9
18.25	5.9	28.91	69.3	4802.5	173.9	17.8	604.9	6542.9
18.50	6.0	29.00	70.2	4930.8	178.3	-9.8	-332.0	6856.5
18.75	5.8	29.09	68.0	4629.4	174.4	-24.6	-777.4	6594.4
19.00	5.2	29.17	67.6	4568.4	175.5	13.6	530.8	6674.4
19.25	5.8	29.25	67.6	4573.8	172.9	-29.0	-1003.0	6456.7
19.50	5.6	29.34	65.8	4333.6	165.9	-0.6	-94.4	5945.6
19.75	5.3	29.42	65.4	4273.2	166.6	11.9	470.9	6003.6
20.00	5.4	29.50	63.1	3985.4	158.8	-3.8	-138.8	5489.7
20.25	5.5	29.58	63.6	4043.7	159.4	-6.8	-241.1	5515.6
20.50	5.4	29.66	63.2	3990.4	159.5	-8.6	-277.1	5520.4
20.75	5.1	29.74	62.8	3940.1	162.0	-17.4	-550.3	5672.7
21.00	4.8	29.81	61.9	3830.4	161.1	-3.3	-123.1	5610.7
21.25	5.0	29.88	61.0	3724.7	157.7	-22.8	-710.0	5376.3
21.50	4.5	29.95	61.1	3728.3	161.3	-3.6	-97.6	5617.8
21.75	4.7	30.02	59.7	3564.1	154.0	-2.3	-112.5	5128.4
22.00	4.6	30.09	59.3	3510.6	153.1	5.6	196.6	5080.1
22.25	4.8	30.16	59.3	3511.7	151.8	-14.2	-502.1	4961.4
22.50	4.6	30.23	58.9	3463.3	153.0	-13.4	-363.9	5052.7
22.75	4.4	30.30	59.3	3520.0	157.6	-0.9	-245.6	5353.3
23.00	4.4	30.37	56.6	3205.8	145.6	-2.6	-135.1	1591.9
23.25	4.4	30.43	55.6	3207.0	146.7	-4.7	-185.4	4627.6
23.50	4.1	30.49	57.1	3257.0	150.4	14.8	538.2	4879.0

DATA FILE = NSEATS4

TIME	HHR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES	
							TEMP RISE WALLS & CEILING	TEMP SOD WALLS & CEILING
23.75	4.4	30.56	56.2	3159.6	146.7	-23.8	-680.4	4647.1
24.00	4.2	30.62	56.6	3207.0	147.4	11.9	305.6	4674.5
24.25	4.3	30.69	55.3	3058.1	143.6	-5.9	-149.6	4465.3
24.50	4.5	30.75	54.9	3009.6	139.6	-16.0	-488.2	4205.8
24.75	4.5	30.82	54.0	2913.8	136.8	-11.3	-293.2	4051.0
25.00	4.2	30.80	53.1	2819.5	134.9	1.5	39.4	3940.3
25.25	4.3	30.95	53.5	2866.5	136.4	-3.2	-116.9	4006.1
25.50	4.1	31.01	53.5	2866.5	137.4	4.2	176.3	4088.2
25.75	4.2	31.08	52.7	2772.0	133.9	-5.1	-177.2	3875.9
26.00	4.3	31.14	52.7	2776.2	135.4	-21.0	-500.6	3969.0
26.25	4.0	31.20	53.2	2824.9	138.5	-5.7	-149.2	4141.6
26.50	3.9	31.26	51.8	2685.3	134.8	-5.7	-165.3	3934.7
26.75	4.2	31.32	50.4	2541.2	123.6	10.6	462.5	3320.8
27.00	4.1	31.38	51.3	2635.8	131.1	-6.3	-115.4	3722.9
27.25	4.2	31.45	50.5	2545.2	126.7	-8.6	-270.4	3465.6
27.50	4.3	31.51	49.6	2455.2	122.4	-8.0	-231.9	3230.5
27.75	4.0	31.57	49.1	2414.7	124.6	-9.6	-168.2	3367.4
28.00	3.6	31.63	50.5	2550.3	133.1	-2.1	-39.5	3812.9
28.25	3.9	31.68	48.7	2367.8	120.9	14.7	370.9	3169.2
28.50	4.2	31.75	47.8	2282.0	117.3	-5.4	-135.1	2993.3
28.75	4.2	31.81	47.8	2282.9	117.8	-16.1	-364.9	3006.5
29.00	4.2	31.87	48.7	2368.8	118.6	3.3	108.0	3053.0
29.25	4.2	31.94	48.2	2327.1	119.1	-7.2	-180.4	3071.7
29.50	3.6	31.99	47.4	2244.9	122.8	-3.3	-82.9	3241.7
29.75	3.5	32.04	48.3	2332.9	127.5	-8.6	-218.7	3470.7
30.00	3.9	32.10	47.4	2243.0	117.3	4.4	136.9	2973.9
30.25	3.5	32.15	47.4	2247.7	125.1	-13.7	-301.7	3357.0
30.50	3.7	32.21	46.1	2120.6	115.8	-1.1	-65.2	2873.9
30.75	3.8	32.27	46.1	2120.6	115.2	-2.4	-24.5	2858.9
31.00	4.0	32.33	45.6	2077.5	110.3	-1.5	-6.7	2644.6
31.25	3.8	32.38	44.7	1999.0	110.9	-6.8	-180.5	2645.4
31.50	4.0	32.44	44.7	1997.2	106.7	1.4	64.3	2470.3
31.75	3.8	32.50	43.8	1919.3	107.6	-5.4	-71.6	2518.9
32.00	3.5	32.55	43.8	1921.9	110.6	-6.2	-180.5	2623.6
32.25	3.7	32.61	43.8	1921.9	109.0	-6.3	-149.4	2546.9
32.50	3.3	32.66	43.0	1844.7	109.3	1.1	104.7	2592.2
32.75	3.9	32.72	43.4	1881.0	104.3	-2.0	-43.4	2363.0
33.00	3.7	32.77	42.9	1843.8	105.6	-3.9	-82.8	2417.3
33.25	3.9	32.83	42.9	1843.8	103.6	-8.1	-163.3	2333.9
33.50	2.9	32.87	41.6	1733.1	109.0	3.5	74.9	2554.3
33.75	3.6	32.92	42.1	1769.0	103.5	3.8	-71.5	2346.1
34.00	3.5	32.98	41.2	1695.8	101.6	-7.4	-143.2	2241.9
34.25	3.2	33.03	40.7	1658.9	102.1	1.8	41.2	2259.3
34.50	3.4	33.08	40.3	1623.3	100.1	-8.0	-221.1	2143.7
34.75	3.1	33.12	39.9	1588.0	101.1	-1.9	-21.0	2220.1
35.00	3.5	33.18	39.8	1586.4	95.0	-2.3	-57.9	2097.4
35.25	3.2	33.22	39.4	1551.6	97.0	3.8	131.1	2067.5

PAGE 4

DATA FILE = NSEATS4

TIME	RRR KM	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES TEMP RISE WALLS & CEILING	TEMP SQU WALLS & CEILING
35.50	3.3	33.27	39.4	1552.4	97.3	-7.7	-106.9	2059.2
35.75	3.4	33.32	39.5	1402.3	93.3	6.0	-194.6	1066.3
36.00	3.0	33.37	37.6	1414.5	93.4	0.5	94.9	1906.2
36.25	2.9	33.41	37.6	1416.0	96.4	-6.2	-125.7	2015.5
36.50	3.7	33.47	39.0	1446.3	86.2	4.4	95.1	1641.1
36.75	3.4	33.52	37.6	1411.5	89.3	-5.9	-99.4	1747.4
37.00	3.3	33.57	37.6	1414.5	90.4	-4.4	-113.3	1769.3
37.25	3.1	33.62	36.7	1349.1	90.0	-1.5	-42.9	1747.2
37.50	2.8	33.66	37.2	1383.0	95.5	-5.1	-55.7	1970.0
37.75	2.9	33.70	36.3	1316.2	89.4	2.7	63.9	1741.8
38.00	2.9	33.74	35.8	1284.5	88.8	-2.3	-45.4	1718.0
38.25	3.1	33.79	35.8	1284.5	87.1	-6.9	-128.5	1653.8
38.50	2.9	33.84	36.8	1350.6	91.5	-0.6	36.1	1828.7
38.75	2.6	33.87	35.4	1255.3	91.7	-0.3	-155.5	1818.7
39.00	2.3	33.91	35.0	1223.6	92.4	2.9	37.9	1835.9
39.25	2.2	33.94	35.5	1256.7	96.3	-2.6	-10.3	2000.2
39.50	3.0	33.99	34.1	1160.1	81.9	-3.3	-29.0	1478.1

DATA FILE = NSSTAT55

TIME	OUR IN	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES TEMP RISE WALLS & CEILING	TEMP °C WALLS & CEILING
0.25	0.0	0.00	5.1	29.2	8.0	1084.6	1795.3	30.5
0.50	0.7	0.01	1.8	3.2	-4.9	2.7	0.3	13.9
0.75	1.0	0.03	4.5	20.3	1.4	-1.0	41.7	20.1
1.00	0.2	0.03	2.3	5.1	2.0	5.4	58.3	12.3
1.25	0.6	0.04	1.8	3.2	-4.7	5.3	-9.6	11.9
1.50	5.9	0.13	24.2	583.2	6.8	10.9	49.5	21.0
1.75	12.2	0.31	48.4	2346.4	15.1	33.0	129.1	67.7
2.00	19.8	0.51	76.0	5773.0	24.7	47.6	285.0	164.1
2.25	27.0	1.01	98.9	9787.1	26.6	52.5	360.9	215.9
2.50	33.7	1.52	125.5	15737.7	53.5	62.7	760.5	605.5
2.75	39.3	2.11	143.7	20635.3	64.4	52.4	795.8	993.4
3.00	42.8	2.75	157.6	24831.5	82.1	61.8	1146.4	1571.6
3.25	46.8	3.45	171.5	29422.5	96.4	57.3	1260.9	2155.4
3.50	48.4	4.18	179.0	32026.7	109.3	60.5	1470.9	2751.9
3.75	52.3	4.96	109.4	35887.5	111.2	52.9	1365.6	2934.7
4.00	56.0	5.80	203.1	41265.9	129.5	55.0	1504.3	3878.5
4.25	60.8	6.72	219.6	48219.8	140.6	58.3	1968.6	5049.2
4.50	66.3	7.71	230.0	56529.7	170.0	71.0	2802.2	6646.2
4.75	69.8	8.76	248.8	61886.5	101.0	67.8	2040.3	7545.3
5.00	74.5	9.87	263.3	69342.7	197.6	66.3	3037.4	8999.7
5.25	79.2	11.06	279.7	78204.1	222.7	73.3	3663.5	11298.6
5.50	83.3	12.31	292.8	85714.3	241.3	74.6	4139.7	13207.3
5.75	85.6	13.60	300.4	90254.2	255.0	63.7	3745.1	14083.4
6.00	85.5	14.88	302.7	91627.3	257.9	60.7	3783.7	16490.7
6.25	82.1	16.11	297.3	88381.3	281.2	53.0	3513.7	18200.7
6.50	76.2	17.25	286.9	82305.9	295.8	49.4	2842.4	19829.0
6.75	71.5	18.32	277.8	77189.5	305.8	26.1	1519.1	21101.9
7.00	65.0	19.30	262.4	68859.0	305.0	18.9	1176.8	21134.5
7.25	59.2	20.19	247.9	61429.6	305.0	4.4	251.1	20902.7
7.50	53.9	21.00	233.0	54298.3	297.1	1.2	14.4	19901.8
7.75	49.1	21.73	222.7	49599.7	305.4	-2.8	-299.2	20703.2
8.00	45.2	22.41	212.0	44932.5	303.0	-9.7	-668.1	20441.4
8.25	40.9	23.02	200.1	40020.0	299.3	5.7	-471.1	19931.1
8.50	37.5	23.59	191.2	36572.7	299.0	-10.2	-680.0	19955.1
8.75	34.9	24.11	182.9	33445.1	293.8	-12.0	-815.0	19155.5
9.00	32.1	24.59	176.3	31095.8	290.1	-9.9	-697.0	19506.8
9.25	29.6	25.03	167.1	27932.4	287.8	-14.0	-850.4	18580.6
9.50	26.8	25.44	158.4	25084.2	282.5	-3.4	-303.5	17712.1
9.75	24.5	25.80	151.4	22925.0	280.3	-8.8	-529.8	17444.1
10.00	22.5	26.14	146.7	21515.0	283.9	-12.4	-942.2	17734.7
10.25	21.4	26.46	142.8	20383.3	280.9	-12.0	-711.4	17368.6
10.50	19.8	26.76	130.5	19171.2	282.4	-12.2	-719.5	17510.5
10.75	18.0	27.03	123.3	17760.9	282.1	-10.2	-665.3	17439.0
11.00	16.6	27.28	126.7	16050.0	272.5	-11.1	-578.4	16394.3
11.25	15.3	27.51	122.4	14979.3	269.5	-12.2	-772.9	15003.5
11.50	13.7	27.71	117.6	13839.2	268.7	11.9	895.1	15830.2
11.75	12.7	27.90	112.0	12732.9	262.3	-7.6	-410.7	15151.4

DATA FILE = HSEAF057

TIME	PHIP IN	ENERGY MJ	STATE TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIME WALLS & CEILING	TEMP SOD WALLS & CEILING
12.00	11.8	28.08	103.4	11951.8	250.8	-13.9	000.0	14740.4
12.25	11.1	28.25	106.8	11399.8	257.1	-7.0	-409.6	14541.5
12.50	10.3	28.40	104.5	10947.4	258.4	-12.5	-716.3	14447.3
12.75	9.6	28.55	100.7	10140.5	251.2	-11.1	-601.4	13893.2
13.00	9.1	28.68	98.5	9700.2	249.0	-8.5	-473.5	13615.4
13.25	7.8	28.80	94.6	8952.9	247.9	4.6	-366.9	13407.2
13.50	7.9	28.92	93.3	8766.8	247.2	-0.6	-502.2	12987.3
13.75	0.1	29.04	93.3	8706.8	240.2	-12.0	-500.8	12693.9
14.00	7.5	29.15	90.7	8225.5	237.9	-9.4	-502.5	12441.1
14.25	7.1	29.26	89.0	7913.9	235.9	7.9	-410.6	12234.4
14.50	6.0	29.36	87.2	7609.1	232.0	-12.5	-626.6	11918.7
14.75	6.1	29.45	85.1	7235.2	231.5	-5.3	-337.7	11747.8
15.00	5.8	29.54	83.8	7014.1	230.6	-3.5	-144.8	11674.3
15.25	6.2	29.63	81.5	6645.5	218.2	-13.4	-600.5	10554.6
15.50	5.9	29.71	83.8	7019.1	229.5	-8.0	-490.0	11513.8
15.75	5.7	29.81	82.9	6877.4	229.4	-9.3	-481.9	11478.9
16.00	5.7	29.89	78.5	5157.5	212.7	-4.1	-155.6	10002.8
16.25	5.6	29.97	79.4	6202.8	216.7	-10.8	-474.2	10345.1
16.50	5.4	30.05	79.9	6379.2	221.5	-7.9	-404.1	10734.5
16.75	5.0	30.13	76.8	5895.2	213.5	-5.0	-240.0	10021.1
17.00	4.9	30.20	76.4	5830.8	213.9	-7.3	-323.1	10051.7
17.25	4.5	30.27	73.3	5367.0	205.6	-6.1	-267.9	9344.8
17.50	4.8	30.34	73.3	5267.0	203.7	-7.6	-306.8	9140.6
17.75	4.8	30.42	75.5	5701.8	212.0	-11.8	-497.2	9835.1
18.00	4.5	30.48	72.4	5244.7	203.8	-5.8	-292.0	9118.0
18.25	4.0	30.54	71.6	5120.8	206.0	-0.3	-33.9	9316.7
18.50	4.4	30.61	69.8	4866.5	195.4	-6.2	-268.3	8452.5
18.75	4.2	30.67	70.7	4995.7	200.9	-5.3	-252.8	8862.1
19.00	5.0	30.75	71.5	5119.4	196.1	-19.1	-734.2	8404.3
19.25	4.1	30.81	70.3	4936.5	199.1	3.0	-29.8	8672.9
19.50	4.0	30.87	69.0	4754.1	197.1	-7.9	-306.3	8518.9
19.75	4.7	30.94	69.4	4812.2	191.3	-14.1	-501.3	8066.8
20.00	4.2	31.00	69.4	4816.4	195.3	-2.3	-101.0	8341.7
20.25	4.0	31.06	67.6	4575.2	191.4	-6.5	-222.5	8046.9
20.50	4.1	31.12	64.5	4162.8	178.0	-5.3	-229.0	7994.8
20.75	3.9	31.18	66.0	4458.2	189.6	-2.1	-83.5	7889.7
21.00	3.4	31.23	65.5	4285.3	190.3	-6.2	-303.3	7691.0
21.25	3.7	31.29	64.6	4169.3	184.1	-6.7	-233.4	7431.4
21.50	3.4	31.34	64.2	4116.5	186.5	-8.6	-312.1	7607.4
21.75	3.6	31.39	61.9	3834.1	175.0	-6.8	-227.9	5837.1
22.00	3.7	31.45	62.8	3945.1	176.9	-4.4	-208.6	6889.8
22.25	3.9	31.51	63.7	4059.0	178.6	-11.2	-306.2	7016.8
22.50	4.0	31.57	63.7	4059.0	176.9	-6.7	-242.5	6091.0
22.75	3.8	31.63	63.7	4050.2	178.7	-2.1	-157.2	6971.6
23.00	3.6	31.68	62.0	3830.0	175.4	-4.1	-110.5	6750.0
23.25	3.1	31.73	60.2	3626.4	174.6	-3.2	-157.9	6662.4
23.50	3.5	31.78	50.4	3412.9	164.2	-5.6	-141.6	5983.3

DATA FILE = NSEAT55

TIME	RHR KW	ENERGY MJ	STACK TEMP TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES TEMP RISE WALLS & CEILING	TEMP SQR WALLS & CEILING
23.75	3.6	31.94	50.9	2590.81	164.2	-9.1	-330.6	5591.1
24.00	3.0	31.89	60.7	3684.49	169.2	-7.0	-231.6	6002.2
24.25	3.4	31.94	60.7	3684.49	172.9	-2.9	-103.7	6507.5
24.50	3.6	32.00	59.3	3520.09	155.9	-1.2	-27.8	6035.3
24.75	3.1	32.04	50.0	2500.00	166.0	0.3	50.0	6002.3
25.00	3.6	32.10	56.7	3214.89	156.6	-10.4	-267.4	5427.2
25.25	3.4	32.15	50.0	2500.00	162.9	-1.8	-59.3	5026.9
25.50	3.6	32.20	50.5	2550.25	162.9	-9.1	-319.9	5013.1
25.75	3.2	32.25	57.2	3271.84	162.8	-0.3	-23.9	5795.1
26.00	4.0	32.31	50.9	2590.81	160.7	-8.5	-234.9	5656.3
26.25	3.5	32.36	50.0	2500.00	161.9	-4.1	-153.4	5721.4
26.50	3.5	32.42	57.2	3271.84	158.6	-4.5	-170.6	5490.1
26.75	3.1	32.46	56.3	3168.49	160.7	-0.3	-11.8	5624.7
27.00	3.8	32.52	57.6	3317.76	158.4	-9.4	-239.0	5491.9
27.25	3.9	32.58	57.6	3317.76	155.5	-2.7	-92.2	5302.4
27.50	3.4	32.63	55.4	3069.16	154.2	-5.2	-235.2	5171.1
27.75	3.2	32.68	54.5	2970.25	153.3	-3.6	-64.2	5137.3
28.00	3.7	32.73	54.1	2926.81	145.2	-5.3	-139.7	4657.2
28.25	4.0	32.79	57.2	3271.84	153.1	-4.1	-61.6	5158.7
28.50	3.7	32.85	55.9	3114.81	152.3	-3.6	-118.8	5098.7
28.75	3.6	32.90	55.9	3120.81	153.5	-4.1	-103.9	5141.4
29.00	3.7	32.96	56.8	3226.24	155.2	-2.1	-83.2	5238.3
29.25	3.0	33.01	52.3	2735.29	137.4	0.6	33.4	4190.5
29.50	3.7	33.07	54.1	2926.81	145.3	-4.4	-151.4	4632.7
29.75	4.0	33.13	56.3	3168.49	150.3	-6.9	-220.9	4919.6
30.00	3.9	33.19	54.5	2970.25	144.8	-4.1	-147.3	4577.8
30.25	4.0	33.25	54.1	2926.81	142.0	-2.1	-53.4	4421.3
30.50	3.5	33.30	52.8	2787.84	142.3	1.2	36.5	4436.5
30.75	4.1	33.36	54.1	2926.81	141.1	-4.7	-100.1	4302.3
31.00	4.3	33.42	55.4	3070.36	143.9	-6.8	-209.0	4531.9
31.25	4.3	33.49	55.9	3120.81	145.3	-3.5	-113.5	4605.3
31.50	4.1	33.55	54.1	2926.81	140.7	-0.6	5.0	4347.4
31.75	4.2	33.61	53.7	2883.69	138.4	-9.2	-270.7	4210.5
32.00	3.6	33.67	51.9	2692.61	137.4	5.1	82.4	4125.2
32.25	3.8	33.72	51.9	2692.61	136.4	-3.9	-72.6	4007.5
32.50	4.6	33.79	53.2	2830.24	132.0	-8.5	-151.4	3870.3
32.75	4.1	33.86	52.8	2787.84	131.6	1.2	27.1	3971.8
33.00	4.0	33.92	51.4	2641.96	132.3	0.0	0.0	3849.5
33.25	4.2	33.98	51.4	2641.96	129.8	-1.2	5.3	3731.0
33.50	4.6	34.05	53.2	2830.24	132.3	-8.0	-221.5	3854.0
33.75	4.1	34.11	53.2	2830.24	136.6	-0.5	-26.7	4080.5
34.00	4.3	34.17	51.9	2692.61	131.0	-4.7	-110.5	3770.1
34.25	4.0	34.23	50.6	2560.36	128.9	0.6	40.3	3679.3
34.50	4.2	34.29	51.0	2601.00	128.1	-1.8	-41.9	3675.7
34.75	4.6	34.36	52.3	2735.29	128.7	-8.0	-243.0	3641.0
35.00	3.9	34.42	49.7	2470.09	126.9	1.8	36.6	3541.4
35.25	4.2	34.48	49.7	2470.09	123.7	-3.5	-69.3	3503.2

DATE FILE = NSEATS5

TIME	PHR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP		TEMP RATE		TEMP TINES	
					WALLS A CEILING	WALLS B CEILING	WALLS A CEILING	WALLS B CEILING	WALLS A CEILING	WALLS B CEILING
35.50	4.5	34.55	50.6	2556.3	124.1	-7.4	-111.0		3440.0	
35.75	3.9	34.51	49.7	2469.1	125.5	0.6	-31.2		3520.5	
36.00	3.4	34.66	47.5	2255.3	124.0	2.1	35.9		3430.8	
36.25	3.5	34.71	47.9	2298.2	125.9	-4.4	-90.0		3494.7	
36.50	4.5	34.78	49.7	2460.1	120.9	-11.0	-191.0		3268.0	
36.75	3.6	34.83	47.5	2255.3	121.6	2.7	0.4		3255.0	
37.00	3.5	34.89	46.2	2139.7	110.9	-1.8	17.3		3153.2	
37.25	4.1	34.95	48.4	2340.6	121.1	-9.1	216.6		3248.4	
37.50	3.9	35.01	47.9	2298.2	120.0	-1.2	-5.4		3245.5	
37.75	3.5	35.06	47.5	2257.2	123.1	0.0	-36.6		3303.1	
38.00	3.5	35.11	47.1	2215.6	122.6	-2.1	-79.7		3292.7	
38.25	3.7	35.17	43.5	1990.5	106.5	-1.2	-4.1		2565.9	
38.50	3.7	35.22	45.7	2091.2	115.0	-0.0	-118.4		3006.1	
38.75	3.3	35.27	46.6	2175.3	122.1	-1.7	-124.5		3263.6	
39.00	3.0	35.32	44.0	1933.4	116.5	4.4	62.0		2967.1	
39.25	3.5	35.37	44.9	2011.5	114.7	-6.9	-61.5		2930.8	
39.50	3.6	35.42	44.9	2011.5	113.5	-5.0	-125.8		2961.6	
39.75	2.8	35.46	43.1	1857.6	116.0	0.0	53.8		2971.2	
40.00	3.7	35.52	44.9	2012.4	113.1	-11.5	-195.6		2951.6	
40.25	3.0	35.57	45.8	2095.8	122.5	1.5	-3.8		3270.2	
40.50	2.8	35.61	42.7	1820.7	115.2	-2.1	-35.9		2922.1	
40.75	3.5	35.66	43.5	1894.9	110.0	-2.6	-39.2		2682.5	
41.00	2.8	35.70	44.9	2016.9	122.5	-4.1	-105.8		3258.4	
41.25	3.0	35.75	40.4	1634.6	104.2	-1.2	-12.4		2143.4	
41.50	3.1	35.79	42.2	1782.5	109.7	-5.1	-107.5		2577.7	
41.75	3.4	35.84	42.7	1819.9	100.1	-6.2	-112.1		2504.5	
42.00	2.9	35.89	41.8	1746.4	110.1	-1.2	-40.8		2676.4	
42.25	2.6	35.93	40.0	1601.6	107.6	-0.9	-43.7		2554.1	
42.50	2.9	35.97	38.7	1494.6	90.6	0.0	32.8		2195.2	
42.75	3.2	36.02	41.3	1709.0	105.5	8.3	-178.5		2468.4	
43.00	2.3	36.05	39.1	1531.9	106.6	4.2	70.4		2480.5	
43.25	2.6	36.09	39.1	1531.9	105.0	-6.2	-69.4		2451.0	
43.50	3.2	36.14	40.5	1637.0	102.7	-9.5	-165.0		2353.8	
43.75	3.0	36.18	40.0	1601.6	102.5	-0.6	-52.4		2325.9	
44.00	2.6	36.22	40.9	1676.1	111.2	-1.1	-27.3		2695.4	
44.25	2.3	36.25	37.4	1396.5	101.9	4.1	81.1		2253.3	
44.50	2.4	36.29	37.4	1396.5	100.4	2.3	-51.4		2227.4	
44.75	2.6	36.33	36.9	1363.1	96.5	-6.6	-77.8		2056.1	
45.00	2.8	36.37	37.8	1429.6	97.4	-5.6	-75.6		2139.1	
45.25	2.6	36.41	36.0	1298.2	92.6	-1.2	-43.6		1942.6	
45.50	2.6	36.45	36.9	1363.8	96.0	-4.1	113.2		2055.7	
45.75	2.5	36.49	36.5	1331.5	96.0	-0.3	-14.2		2040.1	
46.00	2.6	36.53	35.1	1234.8	89.5	1.2	37.0		1815.0	
46.25	2.9	36.57	36.9	1363.8	93.7	-10.1	-156.9		1903.9	
46.50	2.3	36.61	38.0	1456.1	103.9	4.1	62.9		2361.6	
46.75	2.1	36.64	34.3	1174.4	82.5	0.1	5.0		1999.1	
47.00	2.5	36.68	34.7	1204.1	89.8	-1.8	-6.9		1817.0	

DATA FILE = NSEAT155

TIME	AIR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES TEMP RISE WALLS & CEILING	TEMP SOD WALLS & CEILING
47.25	2.3	36.71	37.4	1398.8	102.3	-4.2	-197.6	2203.8
47.50	2.6	36.75	36.5	1332.3	94.6	-3.8	-57.7	1907.2
47.75	2.2	36.78	33.8	1144.5	89.7	-1.5	-17.5	1817.9
48.00	2.6	36.82	32.9	1083.7	82.1	-3.5	-67.5	1547.5
48.25	2.0	36.87	35.2	1235.5	87.7	-4.5	-72.1	1735.5
48.50	2.3	36.90	33.4	1114.9	87.4	-1.2	-15.3	1713.4
48.75	2.2	36.93	33.0	1085.7	86.9	-2.1	-48.8	1688.8
49.00	2.2	36.97	33.0	1085.7	86.4	-1.8	-16.9	1695.2
49.25	2.7	37.01	34.3	1175.1	86.5	-8.8	-124.4	1704.1
49.50	2.3	37.04	34.7	1206.9	91.3	1.1	-14.8	1854.5
49.75	1.9	37.07	32.5	1056.9	87.7	3.8	52.4	1718.3
50.00	2.0	37.10	32.1	1028.5	86.9	-3.5	-34.4	1696.8
50.25	2.3	37.13	33.0	1086.4	86.0	-3.2	-40.1	1667.7
50.50	2.8	37.18	34.3	1175.8	86.1	-8.9	-141.9	1671.8
50.75	2.0	37.21	32.5	1057.6	86.9	3.5	33.1	1679.3
51.00	2.3	37.24	32.5	1056.9	84.3	-1.4	-60.2	1625.9
51.25	2.4	37.28	33.9	1146.5	87.6	-4.8	-148.1	1704.1
51.50	2.0	37.31	33.9	1147.2	92.1	-0.2	0.3	1864.5
51.75	2.1	37.34	33.0	1087.7	88.4	-5.7	-104.5	1729.7
52.00	2.1	37.37	31.2	972.8	81.9	0.9	8.4	1499.9
52.25	2.1	37.40	29.9	891.0	77.3	-0.4	-38.2	1372.9
52.50	2.1	37.43	32.1	1029.8	85.3	-4.1	-105.0	1609.5
52.75	2.2	37.47	32.5	1058.9	86.4	-4.5	-46.9	1662.0
53.00	1.9	37.49	29.4	864.9	77.6	0.6	21.2	1374.2
53.25	1.9	37.52	29.0	838.7	75.4	0.6	1.7	1304.6
53.50	2.1	37.55	28.5	812.8	72.6	-2.3	-38.3	1218.1
53.75	2.5	37.59	31.6	1001.1	79.2	-9.5	-143.6	1418.2
54.00	1.8	37.62	31.7	1002.4	86.4	1.8	18.5	1649.4
54.25	1.7	37.64	29.0	840.4	79.1	-2.3	-30.8	1403.1
54.50	2.3	37.68	29.4	864.9	73.8	-3.3	-10.2	1253.5
54.75	2.3	37.71	30.8	945.6	77.9	-1.5	-36.5	1367.3
55.00	1.8	37.74	30.8	947.4	84.3	-1.5	-36.6	1566.5
55.25	1.4	37.76	27.2	739.8	74.4	5.7	112.3	1260.3
55.50	2.1	37.79	27.6	764.0	70.1	-8.3	-96.0	1140.3
55.75	2.0	37.82	29.0	840.4	75.8	-4.5	-98.7	1288.0
56.00	2.0	37.85	24.5	600.7	58.5	2.6	57.0	834.0
56.25	2.2	37.89	28.1	789.0	70.4	-5.9	-52.1	1154.6
56.50	2.1	37.92	28.1	789.0	70.7	1.2	-32.8	1135.8

DATA FILE = NSEAT155

TIME	WIND DIR	ENERGY WIND	STACK TEMP	STACK TEMP SQUARED	TEMP WINDS CEILING	TEMP PICT WINDS CEILING	TEMP THIN WINDS CEILING	TEMP THIN WINDS CEILING
0.25	0.0	0.00	5.8	45.6	15.1	111.3	3430.9	48.2
0.50	0.1	0.00	4.5	20.3	11.9	4.2	25.4	31.7
0.75	0.9	0.01	3.6	13.0	-0.2	3.3	2.7	1.5
1.00	0.5	0.02	7.7	58.5	18.2	1.5	5.0	67.1
1.25	0.3	0.03	5.0	24.5	10.6	5.4	24.5	25.1
1.50	5.8	0.11	25.9	672.4	14.5	15.2	78.8	49.5
1.75	13.4	0.31	55.1	3030.5	25.5	34.5	195.1	137.4
2.00	22.6	0.65	95.0	7396.0	31.2	40.6	500.9	211.0
2.25	29.3	1.09	109.9	12073.6	45.3	47.6	466.7	440.3
2.50	34.5	1.61	129.4	16744.4	62.0	57.9	817.0	678.2
2.75	40.4	2.22	145.2	21383.2	62.0	53.9	720.8	649.7
3.00	44.2	2.80	162.4	26373.8	86.7	53.8	990.9	1608.1
3.25	47.7	3.60	174.6	30492.1	99.4	50.7	1127.2	2132.4
3.50	49.6	4.34	182.9	33457.0	113.8	57.9	1459.2	2804.6
3.75	53.1	5.14	194.4	37771.9	124.6	52.1	1377.4	3523.0
4.00	56.3	5.98	205.8	42370.1	139.2	49.3	1536.7	4195.3
4.25	57.6	6.84	212.0	44961.0	152.8	54.3	1741.4	5022.3
4.50	58.8	7.73	216.9	47058.6	162.5	30.9	1370.2	5678.4
4.75	59.8	8.62	222.3	49400.4	175.4	42.7	1612.4	6603.6
5.00	60.5	9.53	225.9	51008.2	183.8	42.4	1608.9	7224.0
5.25	62.1	10.45	230.8	53259.4	189.8	33.2	1390.8	7731.1
5.50	61.4	11.38	232.1	53884.3	204.1	39.1	1586.1	8047.9
5.75	61.7	12.31	233.5	54508.2	207.6	32.0	1399.3	9167.9
6.00	62.3	13.24	236.6	55989.0	216.0	34.7	1672.5	9877.2
6.25	60.7	14.15	235.7	55563.9	230.5	30.8	1512.2	11200.9
6.50	57.0	15.01	225.9	51008.2	227.3	23.4	1292.5	10972.4
6.75	50.8	15.77	211.6	44770.3	233.8	25.8	1153.2	11536.3
7.00	46.9	16.47	201.9	40384.9	233.7	8.5	401.3	11515.2
7.25	41.8	17.10	187.7	35242.6	234.3	11.4	500.8	11589.7
7.50	37.6	17.66	178.1	31726.7	241.0	3.2	95.3	12277.3
7.75	34.7	18.18	167.6	28076.4	230.1	-2.1	-27.0	11195.8
8.00	31.5	18.65	161.1	25950.0	239.8	-6.1	-329.8	12007.0
8.25	29.2	19.10	154.6	23880.8	239.2	-2.3	-67.1	12045.0
8.50	27.3	19.51	148.0	21907.0	234.3	-1.7	-59.1	11584.5
8.75	24.7	19.80	141.5	20030.7	238.1	-2.7	-156.5	11014.9
9.00	23.7	20.23	137.2	18812.9	232.1	-5.9	-109.0	11119.7
9.25	21.0	20.56	135.1	18249.3	244.6	-4.1	-316.0	12547.5
9.50	20.5	20.87	128.5	16512.3	233.4	0.0	-5.0	11466.9
9.75	20.2	21.17	127.2	16179.8	231.9	5.0	-281.7	11316.5
10.00	18.0	21.45	124.2	15425.6	236.0	1.0	-80.8	11631.4
10.25	16.9	21.72	119.9	14364.0	233.4	-1.1	-74.3	11438.9
10.50	16.5	21.97	117.2	13745.2	230.4	-3.3	-97.7	11177.8
10.75	16.1	22.21	114.2	13030.4	227.6	-2.1	-66.9	10937.9
11.00	15.8	22.45	112.9	12746.4	227.0	-11.5	-479.4	10895.9
11.25	14.9	22.67	109.9	12071.4	225.2	-7.0	-368.6	10797.0
11.50	13.4	22.87	105.1	11046.0	224.4	-3.2	-139.2	10639.5
11.75	13.3	23.07	103.4	10681.2	218.7	-13.9	-506.5	10103.7

DATA FILE = NSEATSG

TIME	HR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING
12.00	12.0	23.26	100.3	10066.1	219.0	-7.9	-441.3	10137.5
12.05	11.8	23.40	100.0	9996.0	220.5	-7.0	-363.1	10944.8
12.10	10.9	23.59	95.6	9131.7	216.1	-4.7	-173.9	9061.4
12.15	10.7	23.75	92.0	8467.7	205.4	-6.7	-276.5	8957.5
13.00	9.0	23.90	92.1	8484.3	216.1	-11.1	-572.6	9011.3
13.05	8.9	24.08	87.7	7690.3	209.6	-7.9	-200.2	9277.0
13.10	9.2	24.17	85.9	7344.7	203.5	-15.3	-601.5	8777.5
13.15	8.0	24.29	85.6	7322.5	212.7	-8.5	-407.6	9506.0
14.00	7.8	24.41	79.9	6376.0	193.3	5.3	192.0	7943.7
14.05	7.1	24.51	79.9	6380.8	201.7	-11.4	-508.7	8501.2
14.10	6.3	24.61	76.4	5841.5	197.4	-8.2	-340.6	8222.7
14.15	6.5	24.71	73.8	5440.5	185.3	-12.4	-376.8	7340.6
15.00	5.5	24.79	75.6	5719.9	203.8	-7.3	-300.1	8717.6
15.05	5.6	24.87	69.4	4815.0	179.7	-6.2	-101.1	6092.1
15.10	4.9	24.95	72.6	5267.9	199.9	-9.1	-418.2	8390.5
15.15	4.4	25.01	67.3	4525.3	106.5	8.8	-314.2	7363.4
16.00	4.7	25.08	66.4	4405.0	179.5	-9.7	-294.5	6077.4
16.05	4.1	25.15	66.0	4352.0	184.2	-8.5	-427.0	7152.8
16.10	3.5	25.20	62.5	3900.0	178.3	-5.3	-144.0	6748.2
16.15	3.4	25.25	61.6	3793.3	177.1	-13.9	-531.3	6640.2
17.00	3.8	25.31	62.0	3846.5	173.8	-4.4	-174.5	6385.0
17.05	2.8	25.35	59.0	3477.5	174.2	-7.1	-103.7	6430.3
17.10	3.0	25.40	57.6	3320.1	166.3	-4.7	-182.8	5881.6
17.15	3.0	25.44	56.3	3168.6	162.0	-8.5	-250.6	5604.8
18.00	3.0	25.49	56.8	3220.6	163.9	-10.1	-334.0	5731.5
18.05	2.6	25.52	55.9	3124.8	165.9	-10.3	-419.6	5814.0
18.10	2.1	25.56	53.7	2883.7	163.0	-2.3	-67.0	5626.0
18.15	2.0	25.59	51.9	2696.7	158.7	-8.3	-257.6	5349.2
19.00	1.8	25.61	51.1	2606.1	157.1	-6.5	-221.0	5237.5
19.05	2.3	25.65	51.9	2696.7	155.1	-8.0	-255.4	5109.0
19.10	1.8	25.67	51.5	2655.3	159.4	-9.7	-318.4	5360.9
19.15	1.4	25.70	48.4	2344.5	151.9	-3.0	-62.1	4904.7
20.00	1.9	25.72	48.0	2300.2	145.3	-8.6	-185.7	4532.9
20.05	1.6	25.75	47.5	2259.1	146.3	-5.0	-234.5	4542.7
20.10	1.4	25.77	48.9	2391.2	155.2	-9.4	-310.2	5065.4
20.15	1.0	25.78	45.3	2055.7	145.4	-3.2	-76.9	4481.4
21.00	0.9	25.80	44.9	2016.9	145.6	-8.3	-240.2	4402.4
21.05	1.0	25.81	44.0	1937.8	141.8	-5.9	-174.6	4260.1
21.10	1.1	25.83	43.1	1859.3	136.4	-3.8	-105.6	3962.6
21.15	1.4	25.85	44.5	1976.7	138.3	-10.4	-271.5	4070.0
22.00	1.0	25.87	43.1	1861.1	137.6	-2.9	-100.1	4012.9
22.05	0.7	25.88	43.2	1863.6	142.3	8.0	-240.8	4261.9
22.10	0.9	25.89	40.0	1592.4	128.4	-1.7	-10.8	3523.3
22.15	0.8	25.90	41.4	1712.3	133.8	-5.4	-132.6	3805.1
23.00	0.4	25.91	39.2	1535.1	131.7	-8.3	-217.6	3600.0
23.05	1.1	25.93	38.3	1463.0	120.6	-8.6	-172.4	3137.5
23.10	0.8	25.94	39.6	1569.7	127.7	-7.5	-242.2	3462.4

DATA

DATA FILE = HSEATSG

TIME	PUR KW	ENERGY BT	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES TEMP RISE WALLS & CEILING	TEMP GOOD WALLS & CEILING
23.75	0.1	25.94	37.9	1438.4	129.9	0.0	41.4	3508.5
24.00	0.6	25.95	37.0	1365.3	124.1	-3.3	-83.6	3090.3
24.25	0.7	25.95	38.3	1466.9	124.5	-9.5	-263.0	3207.4
24.50	0.1	25.95	36.5	1335.2	125.2	-5.9	-111.4	3386.4
24.75	0.3	25.97	36.1	1301.8	121.0	0.9	13.9	3119.0
25.00	0.6	25.98	37.4	1401.3	122.7	-11.0	-203.4	3196.5
25.25	0.1	25.98	34.8	1208.3	119.5	-3.9	-81.2	3041.5
25.50	0.4	25.98	33.4	1115.2	110.2	-1.4	-15.4	2614.8
25.75	0.8	25.99	36.1	1302.5	115.3	-11.5	-319.8	2063.6
26.00	0.0	25.99	33.9	1148.5	118.4	-0.3	25.5	2973.2
26.25	0.6	26.00	30.9	1146.5	109.9	-7.1	-94.4	2599.5
26.50	0.0	26.00	34.3	1179.2	118.6	-1.1	-77.5	2957.1
26.75	0.7	26.01	34.3	1177.2	110.3	-6.2	-98.1	2507.4
27.00	0.0	26.01	34.4	1179.9	118.5	-3.3	-80.7	2957.3
27.25	0.4	26.02	30.3	918.1	99.3	-4.8	-65.3	2135.3
27.50	0.6	26.03	33.0	1088.3	106.4	-7.6	-209.0	2309.9
27.75	0.1	26.03	33.5	1119.6	114.4	-4.2	-77.6	2756.8
28.00	0.0	26.03	29.9	893.4	104.8	-2.1	2.5	2359.3
28.25	0.5	26.04	31.7	1002.4	103.6	-4.8	-123.8	2205.1
28.50	0.0	26.04	30.4	921.1	107.3	-3.2	-26.6	2448.1
28.75	0.0	26.04	29.9	894.0	105.1	-0.1	-9.8	2343.0
29.00	0.6	26.05	30.3	920.5	98.9	-15.7	-331.1	2075.0
29.25	0.0	26.05	30.8	949.3	109.4	5.9	147.4	2516.7
29.50	0.0	26.05	28.6	815.7	99.1	-5.1	-60.5	2105.8
29.75	0.5	26.05	29.0	841.0	94.6	-9.2	-207.4	1906.0
30.00	0.0	26.05	30.4	921.7	106.1	1.0	27.6	2366.9
30.25	0.0	26.05	27.2	741.5	94.3	-2.1	-33.1	1896.7
30.50	0.3	26.06	25.4	646.7	83.4	-7.4	-105.3	1519.1
30.75	0.2	26.06	28.1	791.3	94.9	-8.0	-183.7	1911.4
31.00	0.0	26.06	25.9	670.8	93.3	2.4	88.8	1863.9
31.25	0.2	26.07	26.8	717.2	89.8	-4.7	-65.3	1733.9
31.50	0.0	26.07	25.9	670.8	91.4	-2.7	-33.2	1700.2
31.75	0.3	26.07	26.0	717.2	88.1	-4.1	-80.3	1657.8
32.00	0.3	26.07	26.3	693.8	87.2	-3.9	-75.4	1619.3
32.25	0.0	26.07	26.4	694.3	91.1	-2.1	-29.4	1763.2
32.50	0.0	26.07	24.1	581.3	82.1	-0.3	5.1	1452.2
32.75	0.4	26.08	24.6	602.7	79.8	-9.3	-123.3	1385.9
33.00	0.0	26.08	25.5	648.2	86.5	-0.3	-45.3	1505.6
33.25	0.0	26.08	23.7	561.2	86.7	1.2	50.5	1607.5
33.50	0.3	26.09	23.7	560.3	77.8	-8.6	-105.0	1319.6
33.75	0.0	26.09	24.6	603.7	84.4	-0.6	-39.7	1517.3
34.00	0.0	26.09	23.7	561.2	86.7	0.0	32.5	1602.3

DATA FILE = NSEAT87

TIME	WIR IN	ENERGY HJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIME'S WALLS & CEILING	TEMP SUD WALLS & CEILING
0.25	0.0	0.00	5.8	34.0	11.7	1225.7	3047.6	70.5
0.50	0.4	0.01	4.9	24.3	9.5	0.0	0.0	61.0
0.75	0.8	0.02	5.8	33.9	7.7	2.9	31.9	61.6
1.00	1.3	0.04	6.7	45.0	6.5	-4.8	-21.9	40.0
1.25	0.8	0.05	5.8	33.9	8.1	-2.6	3.9	49.7
1.50	1.5	0.07	9.9	97.0	11.2	12.2	29.8	62.1
1.75	11.0	0.24	45.7	2007.6	19.7	34.0	187.8	136.4
2.00	24.0	0.60	94.6	8945.4	45.0	65.2	762.8	534.8
2.25	37.4	1.16	135.7	18409.1	50.1	74.0	989.4	737.2
2.50	46.3	1.85	164.8	27168.9	69.2	76.6	1320.6	1310.9
2.75	53.8	2.66	188.1	35370.3	85.1	63.6	1269.1	1806.8
3.00	60.7	3.57	210.2	44179.8	103.9	66.5	1678.4	2730.4
3.25	63.6	4.52	221.8	49195.2	125.0	66.4	2004.0	3048.3
3.50	64.9	5.50	228.1	52015.9	140.0	59.8	1858.7	4733.5
3.75	64.4	6.46	228.1	52020.5	146.0	50.7	1570.0	5115.7
4.00	63.6	7.42	229.0	52427.3	161.5	44.1	1598.3	6149.8
4.25	63.1	8.36	229.4	52633.5	169.3	40.3	1346.1	6654.9
4.50	62.1	9.30	228.5	52226.0	177.6	42.3	1651.6	7307.5
4.75	60.9	10.21	227.6	51815.4	187.9	40.8	1565.5	8060.5
5.00	59.8	11.11	226.7	51402.0	197.5	29.9	1302.3	8872.3
5.25	58.2	11.90	225.8	50999.2	211.5	37.9	1515.0	9970.7
5.50	57.2	12.84	224.9	50593.5	219.7	32.7	1560.2	10736.0
5.75	56.2	13.68	222.3	49395.1	219.0	32.8	1493.6	10691.3
6.00	55.9	14.52	222.7	49595.3	225.0	24.3	1110.1	11238.0
6.25	53.8	15.33	217.8	47423.8	228.0	20.8	1006.8	11530.6
6.50	49.3	16.07	207.5	43064.6	234.6	17.5	809.4	12176.7
6.75	44.4	16.73	196.0	38419.9	239.7	11.4	407.4	12628.7
7.00	39.6	17.33	185.9	34562.5	252.4	5.8	369.3	13906.0
7.25	36.9	17.88	174.9	30503.0	256.4	-9.9	-553.2	12303.8
7.50	33.2	18.38	164.8	27105.6	253.3	-4.4	-234.4	12184.0
7.75	29.5	18.82	155.2	24099.5	238.5	-5.3	-207.8	12500.3
8.00	26.8	19.22	146.5	21474.0	234.0	-9.0	-436.9	12069.7
8.25	24.6	19.59	136.9	18744.3	220.6	-17.8	-937.0	10764.9
8.50	21.5	19.91	131.8	17373.9	235.1	-4.7	-173.8	12105.9
8.75	19.8	20.21	124.4	15475.4	221.1	-9.6	-532.1	10797.1
9.00	18.1	20.48	118.3	13997.3	220.1	-13.1	-704.9	10639.0
9.25	16.7	20.73	114.0	12996.0	224.2	-8.5	-376.9	10437.6
9.50	14.4	20.95	106.6	11370.0	217.9	-10.8	-542.9	10957.7
9.75	12.9	21.14	103.7	10743.3	224.2	-11.8	-440.5	9940.0
10.00	12.2	21.33	98.4	9600.6	212.3	-2.9	-147.7	9873.8
10.25	10.8	21.49	94.1	8847.3	211.6	-11.4	-570.6	9206.5
10.50	10.0	21.64	89.7	8042.5	204.2	-18.4	-709.9	9254.6
10.75	10.2	21.79	87.0	7574.2	192.9	7.6	-539.1	8506.7
11.00	8.9	21.92	84.5	7135.2	197.7	4.1	-63.7	8731.3
11.25	7.9	22.04	82.3	6778.2	201.2	12.9	-605.4	8201.4
11.50	7.6	22.16	79.3	6282.1	193.4	-10.5	461.0	9099.1
11.75	7.1	22.26	77.1	5942.9	190.8			

DATA FILE = NSEATS7

TIME	RHR KW	ENERGY BT	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING
12.00	6.3	22.36	73.6	5418.4	187.6	12.9	-600.9	7312.2
12.25	5.3	22.44	71.0	5042.4	180.7	-4.7	-79.0	7838.9
12.50	5.2	22.52	69.3	4795.6	183.9	-9.9	-404.1	7424.7
12.75	4.6	22.58	66.6	4440.9	181.4	-10.0	-329.5	7258.5
13.00	4.5	22.65	65.3	4266.7	177.2	-7.9	-359.2	6922.8
13.25	4.2	22.72	64.9	4213.3	179.3	-9.7	-344.1	7067.5
13.50	4.0	22.70	61.8	3820.5	170.7	-7.3	-285.4	6446.7
13.75	3.3	22.83	61.4	3773.6	177.4	-9.1	-349.8	6200.7
14.00	3.5	22.80	59.7	3558.1	160.6	-8.3	-244.2	6306.3
14.25	3.3	22.93	57.9	3350.1	164.0	-9.7	-371.7	5967.6
14.50	2.7	22.97	57.1	3251.7	160.1	-10.2	-370.0	6230.3
14.75	1.8	23.00	56.7	3209.2	176.7	-1.5	-8.6	6035.9
15.00	1.5	23.02	55.4	3063.6	176.3	-10.6	-423.4	6779.9
15.25	1.8	23.05	54.5	2954.8	163.8	-8.2	-285.7	6319.9
15.50	1.8	23.07	53.6	2869.7	166.0	-6.1	-231.9	6046.0
15.75	2.2	23.11	51.3	2635.8	154.2	-11.2	-381.6	5273.7
16.00	2.0	23.14	51.4	2637.8	156.3	-9.7	-307.7	5400.2
16.25	1.4	23.16	49.6	2462.1	156.8	-7.0	-316.1	5376.8
16.50	0.8	23.17	47.9	2291.5	157.9	-4.5	-44.6	5491.2
16.75	1.1	23.19	47.9	2291.5	153.8	-7.6	-175.6	5260.5
17.00	1.4	23.21	47.0	2206.2	146.8	-10.0	-405.2	4778.6
17.25	1.6	23.23	44.3	1951.6	124.6	-4.1	-153.3	4067.7
17.50	1.1	23.25	44.3	1964.3	141.5	-8.0	-221.8	4450.7
17.75	1.0	23.26	43.9	1927.2	141.5	-9.0	-320.8	4413.8
18.00	1.0	23.28	43.5	1880.8	139.7	-7.4	-168.6	4327.7
18.25	0.3	23.28	42.2	1776.6	141.9	0.0	25.7	4462.2
18.50	0.7	23.29	42.6	1813.9	139.9	-7.9	-218.9	4345.0
18.75	1.2	23.31	39.9	1592.0	124.0	-10.0	-304.1	3473.0
19.00	1.2	23.33	39.9	1592.0	124.3	-7.7	-184.5	3492.5
19.25	0.5	23.34	40.4	1632.2	124.4	-4.3	-167.8	3986.8
19.50	1.0	23.35	38.6	1489.2	121.6	-6.6	-142.6	3334.9
19.75	0.3	23.36	38.6	1489.2	131.0	-7.1	-197.2	3799.9
20.00	0.2	23.36	38.2	1457.7	128.9	0.6	-18.8	3672.2
20.25	0.0	23.36	38.2	1457.7	136.7	-4.7	-105.9	4094.3
20.50	0.0	23.36	37.8	1427.3	136.4	-10.1	-276.4	4070.1
20.75	0.0	23.36	36.4	1327.9	130.6	5.3	-122.5	3774.7
21.00	0.0	23.36	34.7	1201.3	121.7	-8.9	-237.1	3313.1
21.25	0.0	23.36	35.1	1232.0	121.9	0.8	105.8	3356.9
21.50	0.1	23.36	35.1	1232.0	120.1	-7.3	-265.3	3219.7
21.75	0.0	23.36	33.8	1140.4	116.6	-4.8	-60.2	3081.6
22.00	0.3	23.37	34.2	1170.3	115.0	-6.4	-227.3	2966.0
22.25	0.7	23.38	32.4	1051.1	104.2	-7.7	-180.5	2478.4
22.50	0.3	23.38	32.4	1051.1	107.8	-3.3	-78.3	2628.3
22.75	0.0	23.38	32.0	1024.6	110.2	-8.5	-238.1	2701.3
23.00	0.0	23.38	31.1	969.7	114.1	-2.1	14.7	2209.3
23.25	0.0	23.38	32.0	1024.6	110.5	-5.1	-87.1	2760.5
23.50	0.0	23.38	30.7	941.3	108.0	-1.5	-17.9	2652.1

DATA FILE = HSEATS7

TIME	PIR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES TEMP RISE WALLS & CEILING	TEMP SOD WALLS & CEILING
23.75	0.0	23.38	31.1	969.1	100.3	-7.7	-191.4	2653.3
24.00	0.0	23.38	30.7	942.5	109.9	-2.9	-97.9	2699.3
24.25	0.0	23.38	30.7	942.5	107.8	-8.3	-135.3	2720.6
24.50	0.0	23.38	29.8	889.2	107.4	-1.4	-50.5	2598.3
24.75	0.3	23.39	29.8	888.0	109.0	-11.8	-292.4	2256.5
25.00	0.1	23.39	28.5	810.5	96.4	-5.3	-120.3	2103.2
25.25	0.4	23.40	28.0	785.1	90.8	-4.5	-83.0	1892.4
25.50	0.0	23.40	28.9	836.9	101.1	-3.5	-104.7	2268.6
25.75	0.0	23.40	28.0	786.2	98.2	-2.6	-65.1	2145.5
26.00	0.0	23.40	27.2	737.7	90.2	-9.2	-119.3	2173.0
26.25	0.0	23.40	27.6	762.3	97.6	-2.3	-105.9	2117.4
26.50	0.0	23.40	27.6	762.3	95.6	-8.1	-148.9	2042.1
26.75	0.0	23.40	26.7	713.4	92.9	-1.8	-41.2	1936.1
27.00	0.0	23.40	26.7	714.0	93.3	-7.3	-151.3	1944.1
27.25	0.0	23.40	26.7	714.5	95.0	-2.4	-66.2	1995.4
27.50	0.0	23.40	26.3	691.2	95.9	-5.1	-73.4	2042.2
27.75	0.1	23.40	24.9	621.5	83.7	-4.2	-31.4	1616.9
28.00	0.3	23.40	24.5	599.3	80.4	-4.1	-88.0	1497.7
28.25	0.1	23.40	24.5	599.8	82.3	-1.1	-36.4	1552.3
28.50	0.3	23.41	24.5	599.8	89.9	-5.6	-99.5	1501.9
28.75	0.0	23.41	24.5	600.3	84.6	-3.3	-20.6	1640.2
29.00	0.5	23.41	22.7	515.7	72.0	-5.7	-112.0	1228.8
29.25	0.2	23.42	22.3	496.0	73.1	-4.5	-77.5	1255.4
29.50	0.0	23.42	22.3	496.0	75.4	0.3	22.1	1331.3
29.75	0.1	23.42	21.8	476.1	73.7	-6.8	-119.5	1264.3
30.00	0.0	23.42	21.8	476.5	75.7	-0.9	-26.2	1317.9
30.25	0.0	23.42	21.4	457.5	76.5	-6.2	-114.1	1328.4
30.50	0.0	23.42	20.5	420.3	69.9	0.6	52.7	1154.0
30.75	0.3	23.42	20.1	402.0	65.2	-9.8	-145.1	1017.8
31.00	0.0	23.42	20.5	420.3	72.1	0.9	-12.4	1194.4
31.25	0.0	23.42	20.1	402.4	72.9	-5.0	-91.5	1212.4
31.50	0.0	23.42	20.1	403.2	82.4	2.1	98.2	1533.8
31.75	0.0	23.42	18.7	350.8	72.1	-5.1	-30.5	1235.8
32.00	0.0	23.42	17.4	302.4	66.9	-2.9	-53.4	1003.0
32.25	0.0	23.42	17.0	287.3	65.9	-4.1	-64.7	1050.0
32.50	0.0	23.42	16.1	257.9	63.4	-1.2	-21.6	981.5
32.75	0.0	23.42	14.7	216.4	54.1	-10.0	-161.8	732.6
33.00	0.0	23.42	14.7	216.4	51.3	-2.4	-25.7	671.6
33.25	0.0	23.42	14.7	217.0	64.5	-0.7	-38.2	997.1
33.50	0.0	23.42	14.7	216.7	61.4	-3.5	-79.1	899.3
33.75	0.0	23.42	15.2	230.1	63.4	-0.9	-44.1	960.5
34.00	0.0	23.42	15.6	244.0	66.2	2.1	40.8	1050.5
34.25	0.0	23.42	14.3	203.9	53.9	-13.3	-206.4	717.1

DATA FILE = NSEATSD

TIME	RIR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP SQD WALLS & CEILING
0.25	0.0	0.00	5.4	29.6	10.2	850.3	1765.6	24.0
0.50	0.0	0.01	5.9	34.8	9.0	-4.9	-3.5	18.7
0.75	1.1	0.03	6.3	40.2	6.4	-1.1	15.4	16.9
1.00	0.5	0.04	5.0	24.8	8.1	6.7	10.7	16.1
1.25	0.7	0.05	7.3	52.6	13.3	2.7	5.3	36.2
1.50	6.7	0.15	28.4	803.7	12.3	14.2	52.0	34.7
1.75	23.2	0.50	85.6	7330.8	22.7	41.7	250.3	123.5
2.00	36.8	1.05	131.2	17216.1	38.0	64.5	568.0	346.6
2.25	44.7	1.72	157.7	24865.1	57.7	66.2	832.0	736.3
2.50	47.7	2.43	168.6	28422.6	73.3	44.1	757.4	1191.7
2.75	48.9	2.17	173.3	30039.8	79.4	51.8	909.4	1415.7
3.00	56.7	4.02	195.5	38259.4	88.5	36.5	722.9	1752.3
3.25	60.3	4.92	207.9	43218.3	99.6	53.5	1160.2	2215.0
3.50	60.6	5.83	211.4	44702.6	113.8	47.5	1163.8	2849.5
3.75	61.4	6.75	213.2	45432.9	113.7	36.0	890.6	2876.7
4.00	60.8	7.66	215.4	46392.9	130.9	41.4	1153.1	3747.9
4.25	61.4	8.58	219.4	48127.6	142.7	38.4	1110.8	4398.4
4.50	61.5	9.51	220.7	48708.5	148.3	31.5	1034.3	4773.3
4.75	61.6	10.43	222.9	49693.3	157.7	37.6	1223.7	5365.5
5.00	62.0	11.36	224.7	50490.1	163.2	22.0	817.5	5764.0
5.25	60.3	12.26	223.4	49894.2	175.1	38.5	1338.7	6558.3
5.50	58.7	13.14	220.3	48514.5	180.6	30.8	1253.6	7013.2
5.75	59.1	14.03	222.0	49297.3	185.4	19.2	771.3	7387.3
6.00	57.8	14.90	220.2	48505.7	190.6	39.0	1517.5	7791.5
6.25	55.8	15.73	217.2	47154.1	200.4	30.2	1237.6	8573.3
6.50	52.3	16.52	209.6	43948.9	208.0	30.2	1319.6	9212.9
6.75	48.4	17.24	200.8	40336.7	214.1	24.5	1047.4	9727.0
7.00	45.3	17.92	192.9	37225.8	215.9	7.1	318.0	9877.4
7.25	41.3	18.54	181.5	32956.0	212.6	5.3	295.9	9633.9
7.50	37.6	19.11	173.8	30189.1	222.1	1.5	13.9	10425.8
7.75	34.0	19.62	162.4	26377.0	216.5	-4.1	-179.5	9936.7
8.00	31.4	20.09	154.6	23898.1	214.2	-9.2	-289.7	9773.6
8.25	28.0	20.51	147.8	21836.0	225.7	-8.5	-469.0	10732.8
8.50	25.9	20.90	137.7	18955.8	209.2	-11.8	-453.0	9310.1
8.75	23.3	21.24	129.9	16868.8	207.2	-7.9	-376.7	9119.0
9.00	21.5	21.57	124.3	15440.5	206.1	-13.3	-511.1	9044.4
9.25	19.5	21.86	118.2	13973.6	204.7	-14.5	-644.2	8905.7
9.50	17.9	22.13	110.8	12267.8	193.9	-7.1	-288.0	8834.5
9.75	16.8	22.38	108.2	11711.6	197.1	-14.2	-637.0	8248.9
10.00	15.6	22.61	104.3	10880.6	195.0	-8.5	-360.1	8065.6
10.25	14.7	22.83	109.4	10000.2	191.5	-14.2	-554.1	7704.6
10.50	13.3	23.03	96.1	9229.4	190.2	-14.0	-550.2	7678.7
10.75	12.4	23.22	91.7	8107.1	184.0	-6.8	-216.5	7227.5
11.00	11.4	23.39	88.7	7862.4	185.0	-14.2	-589.0	7260.1
11.25	10.6	23.55	84.3	7099.7	176.5	-6.8	-243.1	6642.9
11.50	9.9	23.70	82.6	6816.2	179.4	-15.4	-597.0	6830.1
11.75	9.4	23.84	80.4	6459.3	176.3	-3.5	-139.7	6595.4

DATA FILE = NSEATSU

TIME	RHR KN	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP SQD WALLS & CEILING
12.00	8.6	23.97	77.3	5976.8	174.4	-7.6	-291.1	6146.7
12.25	8.3	24.09	75.6	5709.3	171.5	-11.6	-413.2	6236.4
12.50	7.6	24.20	73.8	5450.9	172.8	-3.8	-129.4	6323.2
12.75	7.7	24.32	72.1	5191.2	165.3	-11.9	-403.8	5809.2
13.00	6.9	24.42	71.2	5072.3	170.6	-6.2	-282.4	6122.9
13.25	7.1	24.53	69.4	4821.9	163.3	-11.0	-310.1	5614.4
13.50	6.4	24.63	67.3	4522.6	162.2	-4.4	-116.1	5502.3
13.75	6.8	24.73	67.7	4580.6	159.6	-10.1	-337.2	5402.5
14.00	6.2	24.82	66.8	4457.6	162.6	-6.5	-246.3	5500.9
14.25	6.0	24.91	65.9	4340.1	161.1	3.3	157.6	5496.3
14.50	5.9	25.00	65.1	4235.4	160.6	-11.3	-424.9	5420.4
14.75	6.5	25.10	64.6	4173.2	151.9	-7.4	-177.2	4900.4
15.00	6.0	25.19	63.7	4062.8	153.3	-3.3	-106.1	4977.9
15.25	6.3	25.28	62.8	3947.6	147.1	6.9	129.1	4631.8
15.50	5.8	25.37	62.9	3951.4	151.8	0.6	-76.9	4859.5
15.75	6.3	25.46	63.3	4006.9	149.5	-9.2	-262.3	4724.5
16.00	6.1	25.56	64.2	4122.9	153.7	-1.2	-103.8	4946.4
16.25	7.1	25.66	65.0	4230.2	145.7	-5.1	-71.0	4497.6
16.50	7.7	25.78	66.3	4401.0	143.3	-0.3	-42.5	4342.6
16.75	8.4	25.90	69.0	4759.6	144.7	-3.5	-98.6	4424.8
17.00	8.1	26.03	69.9	4884.6	150.6	5.6	139.7	4753.2
17.25	8.9	26.16	71.2	5066.6	146.6	2.1	115.3	4541.4
17.50	9.3	26.30	72.9	5318.8	147.7	4.4	166.6	4623.9
17.75	10.3	26.45	74.2	5505.6	142.1	-4.5	-99.7	4306.4
18.00	11.0	26.62	76.8	5904.4	143.8	-2.3	-109.2	4379.5
18.25	10.5	26.77	77.3	5978.4	150.6	0.0	-54.4	4742.2
18.50	11.3	26.94	77.3	5969.1	141.5	0.0	121.0	4262.9
18.75	10.6	27.10	77.8	6049.7	152.0	-3.3	-165.3	4838.0
19.00	10.2	27.26	75.6	5709.3	147.8	1.2	38.1	4503.6
19.25	9.8	27.40	74.7	5580.1	149.3	-3.0	-56.7	4688.2
19.50	9.7	27.55	73.4	5384.6	145.5	-5.9	-158.2	4475.1
19.75	10.1	27.70	73.4	5381.7	141.3	-8.0	-230.0	4223.8
20.00	9.1	27.84	72.1	5198.4	147.6	-1.8	-79.9	4572.7
20.25	9.1	27.97	70.3	4943.5	141.5	-6.5	-197.5	4207.2
20.50	8.4	28.10	68.6	4701.8	142.8	-3.6	-107.0	4280.6
20.75	8.4	28.23	67.3	4522.6	138.6	-7.8	-252.7	4021.8
21.00	8.7	28.36	67.2	4519.9	135.1	-5.0	-62.4	3865.5
21.25	8.2	28.40	63.7	4055.1	127.8	-2.1	1.2	3504.8
21.50	7.7	28.60	63.7	4060.2	133.5	-4.4	-178.0	3767.7
21.75	6.9	28.70	60.6	3676.0	131.3	0.6	16.5	3645.3
22.00	6.7	28.80	60.2	3626.4	133.1	-10.9	-330.2	3720.4
22.25	6.2	28.89	58.9	3470.4	134.0	-5.4	-158.9	3761.2
22.50	6.1	28.98	57.6	3316.6	131.2	-11.6	-317.0	3600.4
22.75	5.4	29.06	54.5	2969.2	126.6	-0.4	45.2	3306.5
23.00	4.9	29.14	52.7	2781.5	127.0	-7.4	-194.8	3401.7
23.25	5.5	29.22	51.8	2685.3	117.0	-12.6	-250.0	2925.4
23.50	4.4	29.29	49.6	2461.1	120.8	-3.0	-91.9	3089.5

TABLE 1.0 - 1980/1981

TIME	PHW IN	EMERGY BT	STACK TEMP	STACK TEMP CORRECTED	TEMP WALLS & CORRECTED	TEMP DIFF WALLS & CORRECTED	TEMP DIFF WALLS & CORRECTED	TEMP DIFF WALLS & CORRECTED
23.75	4.4	29.26	18.0	2377.5	113.7	-0.6	-209.3	2203.4
24.00	4.4	29.42	17.0	2205.2	111.7	-0.6	-167.8	2601.0
24.25	3.8	29.47	45.7	2003.9	113.5	-2.1	56.0	2752.6
24.50	3.6	29.53	45.0	2045.0	115.6	-0.8	306.6	2002.6
24.75	3.1	29.67	13.5	1000.0	111.5	-4.2	-63.8	2767.5
25.00	3.7	29.63	43.0	1040.1	105.7	-0.1	-130.3	2701.9
25.25	2.7	29.67	41.7	1737.2	111.1	3.3	95.8	2524.2
25.50	3.4	29.72	41.7	1737.2	105.3	-19.1	-434.0	2399.1
25.75	2.6	29.76	39.5	1557.1	105.0	-1.2	32.4	2412.3
26.00	1.0	29.79	38.6	1490.7	111.9	-3.5	-133.6	2634.1
26.25	2.4	29.82	37.7	1420.5	102.3	-11.4	-248.6	2211.4
26.50	2.3	29.86	37.3	1387.6	101.2	-4.2	-62.9	2178.6
26.75	1.5	29.88	35.5	1258.8	105.1	-2.6	-55.2	2331.5
27.00	2.5	29.92	35.0	1225.0	92.0	-6.9	-103.4	1816.4
27.25	1.5	29.94	35.0	1227.1	102.7	-2.3	-66.0	2215.2
27.50	2.2	29.97	34.1	1163.5	91.7	-7.9	-90.1	1094.1
27.75	2.1	30.00	34.6	1195.8	94.7	-6.5	-139.2	1903.3
28.00	1.3	30.02	32.4	1047.2	96.1	-3.3	-55.8	1955.2
28.25	1.4	30.05	32.4	1047.2	93.8	0.0	35.6	1003.3
28.50	1.7	30.07	31.9	1017.6	89.5	-8.0	-159.0	1715.8
28.75	1.2	30.09	31.5	990.4	93.5	-2.1	-49.7	1057.2
29.00	1.3	30.11	30.1	906.6	87.6	-5.4	-90.8	1645.1
29.25	0.9	30.12	30.1	908.4	93.3	-4.4	-110.7	1834.0
29.50	1.6	30.15	29.2	853.8	82.3	-7.8	-58.3	1472.3
29.75	1.4	30.17	28.8	827.7	81.8	-2.0	-84.4	1421.9
30.00	1.1	30.18	29.2	855.0	86.3	-0.1	46.9	1594.9
30.25	1.4	30.21	28.3	802.6	80.4	-5.4	-72.9	1403.8
30.50	1.4	30.23	27.4	752.4	77.0	-4.8	-75.0	1293.9
30.75	1.3	30.25	27.9	777.3	80.2	-5.3	-121.7	1369.3
31.00	1.3	30.27	27.0	728.5	77.0	-3.9	-56.3	1269.1
31.25	1.0	30.28	26.1	681.2	77.2	1.1	39.6	1201.4
31.50	1.2	30.30	26.6	704.9	77.3	-0.9	-140.5	1272.7
31.75	1.4	30.32	26.1	680.7	72.3	-1.8	-11.4	1127.0
32.00	0.7	30.33	25.2	636.0	78.3	-3.3	-46.1	1298.7
32.25	0.5	30.34	24.3	591.0	76.4	1.8	34.5	1244.1
32.50	0.9	30.35	25.2	635.5	75.2	-4.8	-54.4	1213.7
32.75	1.1	30.37	24.8	613.1	71.7	-5.1	-79.0	1102.5
33.00	0.9	30.38	24.8	613.1	73.7	-1.2	-5.3	1160.0
33.25	0.4	30.39	24.3	591.9	77.7	-2.1	-55.3	1268.0
33.50	1.3	30.41	24.8	613.1	70.2	-11.7	-159.8	1047.2
33.75	1.2	30.43	23.9	569.3	66.0	1.2	21.7	934.2
34.00	0.9	30.44	23.9	569.3	70.3	-0.9	-20.9	1042.7

DATA FILE = HSEATS9

TIME	CUR KW	ENERGY MJ	STACK TEMP	STACK TEMP SPWMPD	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES		TEMP SPD WALLS & CEILING
							TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	
0.25	0.0	0.00	12.5	156.8	39.4	174.6	10981.8	305.0	
0.50	0.7	0.01	13.0	160.2	35.5	-6.9	-56.1	302.4	
0.75	0.2	0.01	11.6	135.3	35.7	0.5	43.8	359.3	
1.00	0.2	0.02	11.2	125.0	33.0	1.5	-7.0	304.4	
1.25	0.0	0.02	13.4	180.1	43.7	6.9	30.4	449.0	
1.50	4.6	0.09	28.9	837.5	41.3	0.3	81.7	409.9	
1.75	21.0	0.45	98.4	9674.7	56.9	89.4	1381.5	837.1	
2.00	62.3	1.38	218.7	47816.6	111.3	181.4	4921.6	3007.1	
2.25	94.6	2.80	395.4	93281.4	150.9	708.5	8258.8	6229.9	
2.50	114.1	4.51	357.8	128042.3	216.5	212.4	11703.4	11628.0	
2.75	123.7	6.37	384.5	147855.6	256.3	177.3	11439.3	16467.2	
3.00	128.2	8.29	399.2	159320.7	291.1	138.9	10558.5	21408.5	
3.25	126.9	10.19	402.7	162159.2	326.9	125.5	10071.8	26725.5	
3.50	127.3	12.10	407.6	166097.0	348.7	104.8	8590.4	30283.3	
3.75	128.5	14.03	414.2	171545.1	372.9	97.0	8243.7	34276.0	
4.00	126.9	15.93	414.2	171536.8	391.4	82.8	7294.3	37492.4	
4.25	124.9	17.81	415.1	172283.1	420.0	87.8	8168.6	42520.5	
4.50	123.3	19.66	411.6	171909.7	433.8	72.9	6648.5	45027.8	
4.75	122.1	21.49	414.6	171901.5	448.2	66.7	6627.5	47090.0	
5.00	121.0	23.30	415.5	172540.3	466.3	72.2	7274.0	51448.2	
5.25	119.4	25.09	416.4	173389.0	489.5	66.1	6960.1	56128.9	
5.50	119.7	26.89	420.4	176719.3	507.8	64.4	7029.5	60029.9	
5.75	110.2	28.66	419.0	175594.5	518.8	70.5	7938.3	62580.5	
6.00	112.4	30.35	410.2	160264.0	531.4	59.7	6039.8	65065.8	
6.25	103.3	31.90	393.8	155102.1	542.4	34.8	3507.8	67276.4	
6.50	96.5	33.35	381.9	145817.1	554.4	30.3	3410.6	69922.2	
6.75	94.3	34.76	377.0	142105.4	550.4	10.8	1255.4	69968.2	
7.00	92.6	35.15	373.0	139091.7	548.6	19.7	1941.0	68548.7	
7.25	87.7	37.47	364.5	132867.5	560.2	19.4	2273.1	71168.2	
7.50	82.5	38.70	353.8	125188.6	561.9	6.8	1166.9	71741.5	
7.75	80.8	39.91	350.7	122983.5	563.4	6.2	398.8	71933.8	
8.00	81.6	41.14	352.5	124235.1	565.2	15.9	2124.2	72484.3	
8.25	79.2	42.33	347.1	120485.4	564.6	15.9	1904.8	72455.2	
8.50	74.7	43.45	339.1	114968.5	574.1	20.0	2396.2	74651.9	
8.75	70.4	44.50	331.5	109855.7	580.6	7.8	580.2	75990.6	
9.00	67.3	45.51	324.3	105154.0	579.4	4.4	154.7	75537.7	
9.25	64.2	46.48	317.1	100558.8	579.0	-1.5	-113.8	75479.6	
9.50	62.6	47.41	313.1	98006.6	575.4	-5.5	-933.6	71407.5	
9.75	61.0	48.33	309.0	95493.4	575.2	8.3	1067.6	74491.4	
10.00	58.8	49.21	306.3	93825.8	51	3.3	413.5	76770.7	
10.25	57.4	50.07	299.6	89742.2	567.6	-9.1	-1207.7	72503.5	
10.50	55.1	50.90	294.2	86536.0	568.6	3.8	200.6	72602.5	
10.75	52.5	51.59	289.6	83891.3	575.5	1.1	-113.7	74073.7	
11.00	49.7	52.43	282.9	80009.8	573.9	-6.6	-744.8	73693.5	
11.25	48.7	53.16	278.8	77755.0	564.7	-9.9	-1331.8	71499.5	
11.50	46.5	53.86	272.5	74245.4	560.0	-9.9	-1374.1	70293.6	
11.75	44.2	54.52	268.4	72027.8	565.4	-10.0	-1405.2	71607.4	

DATA FILE = USEA133

TIME	AIR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIME'S TEMP RISE WALLS & CEILING	TEMP STOP WALLS & CEILING
12.00	42.3	55.16	262.9	69132.2	561.9	-10.3	-2000.7	70562.0
12.25	40.9	55.77	258.4	65770.6	557.3	-9.3	-1432.5	69379.5
12.50	38.0	56.34	250.2	62610.0	552.2	-11.2	-1204.5	68221.2
12.75	36.4	56.09	246.1	60575.1	550.3	-16.6	-2290.0	67559.1
13.00	35.1	57.41	240.2	57705.6	537.7	-23.7	-2804.9	64641.1
13.25	30.8	57.90	234.8	55149.0	511.1	-13.3	-1452.2	65559.1
13.50	31.4	58.38	230.3	53051.9	536.1	-20.0	-2359.7	64183.6
13.75	29.9	58.82	227.6	51915.4	540.7	-17.7	-2290.2	64974.9
14.00	29.0	59.26	221.8	49190.8	523.7	-22.8	-2993.4	61058.0
14.25	27.3	59.67	216.0	46643.0	519.4	-17.4	-1824.7	60140.5
14.50	26.9	60.07	215.5	46457.5	519.9	-24.8	-3081.0	60000.1
14.75	26.7	60.47	213.8	45689.1	516.7	-12.8	-1369.2	59293.3
15.00	26.2	60.87	211.5	44740.7	513.3	-13.7	-1215.8	58681.9
15.25	25.5	61.26	210.5	44360.8	504.5	-17.3	-2283.9	56611.6
15.50	26.0	61.65	210.6	44369.2	511.5	-7.8	-881.7	57998.9
15.75	26.9	62.05	211.1	44550.5	503.4	-5.5	-019.0	56210.1
16.00	27.2	62.46	211.5	44740.7	502.1	-14.1	-1516.6	55895.4
16.25	26.8	62.87	209.7	43990.9	500.1	0.8	308.2	55596.1
16.50	27.2	63.27	209.7	43986.7	494.1	-14.8	-1736.2	54271.7
16.75	26.8	63.68	208.4	43430.6	493.2	-12.7	-1300.9	54024.0
17.00	26.5	64.07	208.0	43251.5	495.0	-10.7	-1147.0	54340.4
17.25	26.2	64.46	206.6	42696.0	492.7	-9.2	-1019.2	53821.5
17.50	25.7	64.85	204.4	41783.4	487.9	-19.3	-2056.6	52778.0
17.75	25.5	65.23	202.6	41058.9	484.6	-4.1	-194.1	52235.6
18.00	25.0	65.61	201.3	40521.7	481.9	-10.9	-1432.3	51512.1
18.25	24.9	65.98	200.9	40348.8	482.2	-7.9	-764.9	51558.4
18.50	24.7	66.35	200.0	39996.0	480.0	-17.6	-1815.2	51081.1
18.75	24.0	66.71	196.0	38408.2	470.8	-9.8	-1124.6	49223.5
19.00	22.4	67.05	192.5	37048.6	474.2	-13.4	-1191.1	49908.0
19.25	21.1	67.36	189.9	36043.0	477.5	-13.6	-1520.5	50421.2
19.50	20.5	67.67	185.9	34547.7	467.8	-20.9	-2011.8	48551.9
19.75	19.5	67.95	181.5	32931.4	459.2	-25.4	-2732.2	46755.5
20.00	18.5	68.24	178.4	31826.6	450.3	-12.5	-1277.3	46515.1
20.25	18.0	68.51	174.9	30506.5	449.4	-26.9	-2662.1	44766.0
20.50	17.2	68.77	170.9	29220.5	443.1	-16.2	-1555.0	43570.2
20.75	15.6	69.00	167.0	27895.7	444.1	-13.9	-1344.1	43691.7
21.00	15.2	69.23	163.1	26589.6	432.2	-20.8	-2072.2	41462.2
21.25	13.9	69.44	158.3	25049.4	427.9	-26.3	-2323.8	40667.0
21.50	13.2	69.64	155.2	24093.2	423.3	-18.3	-1603.1	39051.8
21.75	12.3	69.82	151.3	22824.7	417.2	-24.5	-2547.6	38560.3
22.00	11.9	70.00	146.5	21450.5	402.7	-21.8	-1824.6	36154.0
22.25	10.7	70.16	143.5	20580.8	401.8	-18.8	-1661.9	36410.4
22.50	9.9	70.31	140.9	19844.4	404.0	-12.2	-1007.9	34265.3
22.75	8.7	70.44	137.4	18884.3	402.7	-22.9	-2030.4	35964.5
23.00	8.9	70.59	134.3	18044.5	388.0	-22.9	-2100.6	33477.4
23.25	8.2	70.70	130.4	17004.2	381.5	-17.0	-1400.0	32384.8
23.50	7.3	70.81	128.3	16453.2	384.0	-5.0	-200.0	32964.1

DATA FILE = NSE0159

TIME	RHR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RTSC WALLS & CEILING	TEMP RTSC WALLS & CEILING	TEMP RTSC WALLS & CEILING	TEMP SQRO WALLS & CEILING
23.75	6.6	70.91	125.7	15792.9	300.2	-10.2	-1719.6	30090.2	
24.00	5.8	70.99	123.1	15148.7	300.1	-9.5	-771.2	32040.8	
24.25	5.6	71.08	119.1	14192.0	306.7	-95.4	-2009.6	29966.9	
24.50	4.6	71.15	117.0	13691.3	371.2	-0.3	-691.2	30619.1	
24.75	4.4	71.21	115.3	13284.9	365.6	-13.4	-1062.5	29746.1	
25.00	4.2	71.28	114.0	12991.4	363.1	-10.8	-1625.7	29356.5	
25.25	4.4	71.34	110.9	12294.4	349.6	-17.9	-1400.0	27260.2	
25.50	3.6	71.40	110.1	12113.2	355.1	5.2	-349.2	29033.3	
25.75	4.2	71.46	111.8	12501.5	351.8	-10.2	-832.2	27930.2	
26.00	4.4	71.53	112.7	12701.3	356.0	-13.0	-1058.6	28026.5	
26.25	4.9	71.60	112.7	12701.3	350.8	-11.9	-853.6	27204.8	
26.50	5.7	71.69	113.1	12791.6	343.5	-11.4	-961.6	26172.2	
26.75	5.9	71.77	114.9	13195.1	348.4	-7.2	-527.2	26029.6	
27.00	5.9	71.85	113.1	12793.9	341.3	-10.5	-552.5	25933.7	
27.25	6.4	71.95	114.4	13089.6	339.1	-8.6	-941.6	25454.4	
27.50	7.1	72.06	115.3	13284.9	335.9	-4.1	-236.6	25028.4	
27.75	6.7	72.17	117.5	13811.0	348.9	-1.5	-166.3	26707.3	
28.00	7.8	72.28	118.3	14004.4	340.0	-9.0	-678.1	25512.0	
28.25	7.9	72.40	116.6	13586.2	331.2	-8.1	-622.7	24296.8	
28.50	7.0	72.51	114.9	13192.8	335.1	-2.6	-165.7	24810.2	
28.75	7.5	72.62	115.3	13294.1	331.0	-16.2	-1265.5	24172.0	
29.00	7.0	72.72	114.4	13096.5	333.9	2.9	153.1	24539.4	
29.25	6.9	72.83	112.7	12696.8	327.9	-6.4	-475.5	23710.3	
29.50	7.4	72.94	114.0	12996.0	328.3	-7.6	-434.8	23781.2	
29.75	7.5	73.05	113.6	12893.6	323.9	-8.4	-814.4	23074.9	
30.00	7.3	73.16	112.3	12600.1	322.9	-4.1	-59.5	23043.0	
30.25	7.5	73.27	111.4	12398.8	315.4	-11.8	-1087.2	21915.1	
30.50	7.1	73.38	110.1	12113.2	315.8	-7.6	-533.8	21932.1	
30.75	6.4	73.47	108.8	11837.4	319.0	-4.9	-281.6	22362.3	
31.00	5.6	73.56	107.1	11468.3	321.5	-8.0	-671.1	22594.1	
31.25	5.9	73.65	105.8	11185.2	312.8	-16.9	-1148.9	21444.8	
31.50	5.5	73.73	104.5	10914.0	312.7	-9.3	-459.0	21483.6	
31.75	5.2	73.81	102.7	10553.5	309.1	-14.4	-1218.4	20862.9	
32.00	4.8	73.88	100.1	10026.0	305.2	-6.8	-181.8	20492.8	
32.25	4.5	73.95	98.4	9680.6	301.1	-16.2	-1268.4	19846.3	
32.50	3.8	74.00	97.1	9430.4	304.5	-4.1	-303.2	20233.1	
32.75	3.6	74.05	94.5	8928.4	296.7	-13.7	-854.7	19264.1	
33.00	3.9	74.12	94.9	9011.7	294.8	-16.5	-1145.0	18948.2	
33.25	3.5	74.17	92.8	8602.6	291.5	-4.2	-86.7	18540.1	
33.50	3.0	74.21	90.6	8204.7	288.9	-10.4	-718.5	18275.3	
33.75	3.0	74.26	89.3	7969.1	284.2	-9.9	-674.4	17677.0	
34.00	3.4	74.31	88.4	7809.3	275.9	-15.2	-817.0	16758.0	
34.25	3.6	74.36	88.4	7809.3	273.1	-11.1	-759.0	16376.1	
34.50	3.8	74.42	87.1	7577.7	266.9	-15.7	-913.1	15676.8	
34.75	2.8	74.46	84.9	7209.7	270.4	-4.4	-297.2	16043.5	
35.00	2.5	74.50	84.1	7056.1	270.5	-8.5	-512.8	16039.3	
35.25	3.1	74.55	84.9	7211.4	266.5	-15.7	939.1	15549.2	

DATA FILE = NSEATS9

TIME	RHR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING
35.50	2.8	74.59	82.8	6847.6	262.8	-15.1	840.0	15117.9
35.75	3.0	74.63	81.4	6629.2	255.2	-12.3	652.2	14318.3
36.00	2.0	74.66	79.7	6356.9	259.9	-8.2	-390.7	14811.3
36.25	2.1	74.69	78.0	6215.7	255.2	-9.9	-509.0	14313.6
36.50	1.9	74.72	78.0	6082.4	255.1	-18.3	-1121.2	14197.3
36.75	1.4	74.74	75.8	5747.2	252.1	-3.0	-100.1	13922.9
37.00	2.0	74.77	76.7	5879.8	249.2	-11.7	-663.4	13577.7
37.25	1.4	74.79	75.0	5617.5	249.5	-7.6	-269.9	13658.8
37.50	1.3	74.81	74.5	5554.7	249.0	-11.1	-627.1	13567.8
37.75	1.8	74.84	74.1	5484.9	240.9	-5.5	-301.0	12712.3
38.00	2.0	74.87	73.2	5353.8	236.4	-8.8	-407.3	12280.1
38.25	2.1	74.90	74.9	5616.0	240.6	-1.4	-100.9	12648.9
38.50	2.6	74.94	74.9	5611.5	234.9	-4.6	-252.7	12090.0
38.75	3.1	74.99	74.5	5542.8	227.7	-11.1	-576.6	11377.9
39.00	3.1	75.03	74.9	5610.0	228.8	-4.4	-221.7	11472.5
39.25	2.8	75.08	74.0	5481.9	230.0	-4.2	-33.3	11656.9
39.50	2.6	75.12	73.2	5353.8	228.0	-8.1	-547.6	11373.7
39.75	3.2	75.16	72.3	5221.5	218.7	-19.2	-510.3	10505.6
40.00	2.6	75.20	72.3	5230.2	226.0	-6.7	-316.5	11149.2
40.25	2.0	75.23	70.1	4919.6	225.1	-3.8	-133.0	11078.3
40.50	2.5	75.27	71.0	5043.8	222.5	-19.0	-927.4	10809.6
40.75	2.3	75.30	69.7	4858.1	219.2	-4.3	-195.2	10513.0
41.00	1.8	75.33	66.6	4440.9	214.2	-10.9	-434.2	10087.5
41.25	1.7	75.36	67.5	4561.7	217.9	-3.2	-105.2	10415.4
41.50	1.6	75.38	65.4	4270.6	211.9	-15.0	-610.9	9911.6
41.75	1.2	75.40	63.6	4045.0	209.5	-9.6	-526.5	9636.9
42.00	1.0	75.42	63.2	3991.7	210.3	-6.1	-232.9	9705.2
42.25	1.1	75.43	61.4	3770.0	203.3	-9.7	-390.9	9131.0
42.50	1.4	75.45	60.1	3608.4	194.8	-16.3	-810.4	8355.9
42.75	0.4	75.46	60.1	3614.4	206.2	1.1	158.3	9326.0
43.00	0.7	75.47	59.3	3510.6	200.5	-14.3	-600.5	8798.2
43.25	0.6	75.48	57.9	3357.0	197.3	-12.6	-550.9	8510.1
43.50	0.0	75.48	56.2	3157.3	198.2	-5.3	-169.4	8509.0
43.75	0.2	75.48	56.2	3157.3	194.3	-6.7	-246.7	8294.7
44.00	0.0	75.48	55.8	3108.1	195.0	-5.9	-306.5	8311.5
44.25	0.2	75.48	54.4	2963.7	189.3	-14.0	-637.9	7809.1
44.50	0.3	75.49	54.0	2916.0	186.6	-10.9	-331.3	7637.0
44.75	0.0	75.49	53.1	2823.9	188.9	-8.8	-341.6	7794.1
45.00	0.0	75.49	51.8	2686.3	187.0	-7.3	-266.9	7659.7
45.25	0.0	75.49	52.3	2731.1	185.3	-7.1	-282.7	7503.9
45.50	0.0	75.49	49.2	2418.7	179.6	-5.0	-169.9	7001.4
45.75	0.0	75.49	50.1	2507.0	183.0	-4.1	-138.7	7330.1
46.00	0.0	75.49	50.1	2510.0	186.2	-5.3	-180.5	7572.0
46.25	0.0	75.49	47.0	2206.2	168.4	-17.3	-709.1	6237.5
46.50	0.0	75.49	46.6	2166.9	174.6	-1.8	-10.7	6387.5
46.75	0.0	75.49	46.5	2155.0	164.9	-12.3	-470.8	5905.5
47.00	0.0	75.49	46.1	2126.1	167.2	-8.8	-341.3	6110.6

DATA FILE - 1976-1977

TIME	RRR PM	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS A CELLING	TEMP RATE WALLS A CELLING	TEMP RATE WALLS A CELLING	TEMP RATE WALLS A CELLING
47.25	0.0	75.49	46.6	2170.6	175.4	-2.7	21.7	5736.2
47.50	0.0	75.49	46.6	2167.0	160.6	9.4	309.0	6210.6
47.75	0.0	75.49	43.9	1929.0	151.0	-9.4	-343.2	5741.2
48.00	0.0	75.49	43.0	1852.4	161.5	-1.3	45.3	5762.4
48.25	0.0	75.49	44.0	2007.9	163.4	-10.2	-304.3	5046.4
48.50	0.0	75.49	41.7	1740.6	150.5	-1.8	-10.9	5742.2
48.75	0.0	75.49	40.8	1667.9	156.6	-7.6	-266.8	5407.8
49.00	0.0	75.49	41.3	1701.6	147.6	-9.1	-341.8	4815.9
49.25	0.0	75.49	40.4	1631.4	150.1	-7.9	-208.8	4980.3
49.50	0.0	75.49	41.7	1741.4	156.6	-0.5	-104.3	5335.7
49.75	0.0	75.49	40.0	1596.8	149.7	-9.9	-110.1	4995.4
50.00	0.0	75.49	40.0	1596.8	140.7	-4.3	-270.1	4852.9
50.25	0.0	75.49	38.6	1493.0	150.9	0.3	92.7	5028.9
50.50	0.0	75.49	38.6	1492.3	142.5	-15.9	-555.9	4476.3
50.75	0.0	75.49	38.7	1494.6	151.0	1.4	109.4	5052.5
51.00	0.0	75.49	38.2	1458.5	141.1	-7.0	-250.3	4391.8
51.25	0.0	75.49	38.2	1460.8	149.7	-1.2	56.6	4933.7
51.50	0.0	75.49	38.7	1493.8	145.7	-7.3	-282.7	4648.3
51.75	0.0	75.49	38.7	1496.1	151.5	-3.9	-16.8	5034.0
52.00	0.0	75.49	36.9	1360.1	139.9	-10.3	-307.8	4347.1
52.25	0.0	75.49	36.9	1362.3	145.0	-6.5	-256.4	4590.5
52.50	0.0	75.49	36.9	1360.9	140.7	0.9	31.0	4351.2
52.75	0.0	75.49	35.5	1263.1	127.9	-15.5	-445.1	3636.3
53.00	0.0	75.49	35.6	1264.5	135.2	2.3	138.5	4055.2
53.25	0.0	75.49	35.6	1265.9	139.0	-2.7	-86.4	4255.2
53.50	0.0	75.49	34.7	1202.7	130.3	-8.2	-311.2	3728.6

DATA FILE = NBL110W

TIME	INIR IN	ENERGY HT	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES WALLS & CEILING	TEMP SPD WALLS & CEILING
0.00	0.0	0.00	-0.2	0.0	-4.0	4012.0	-2697.2	47.2
0.23	0.7	0.01	2.7	7.2	-4.3	13.1	34.9	29.8
0.40	0.1	0.01		11.2	1.5	34.7	-9.6	19.1
0.56	0.9	0.02	6.0	36.2	4.5	10.1	46.6	30.1
0.73	4.0	0.05	20.7	427.2	13.7	41.7	139.9	70.3
0.90	12.0	0.18	55.6	3088.0	31.8	100.7	895.6	278.7
1.06	28.1	0.46	116.8	13639.9	65.6	202.9	3248.8	1019.5
1.23	44.9	0.91	171.2	29316.3	98.7	212.0	5221.1	2459.9
1.40	55.0	1.46	201.9	40767.6	124.6	161.9	4957.6	3091.4
1.55	60.9	2.00	223.6	50001.4	154.7	170.0	5691.3	5658.6
1.71	65.9	2.66	236.0	55691.3	164.0	96.3	4182.9	6557.4
1.88	70.0	3.36	249.2	62100.6	179.0	96.3	4173.1	7012.8
2.05	74.3	4.11	262.1	68712.1	192.9	83.3	4126.7	9135.5
2.21	78.2	4.89	274.8	75515.0	209.0	90.4	4409.7	10637.7
2.38	80.6	5.69	283.2	80179.6	222.9	89.8	4438.8	11904.3
2.55	82.1	6.52	287.5	82627.5	231.6	52.4	3557.8	12990.9
2.70	83.2	7.26	293.1	85895.9	244.5	78.8	4609.5	14435.5
2.86	86.3	8.13	302.1	91252.3	255.9	54.9	3793.0	15879.5
3.03	87.2	9.00	307.0	94267.4	268.6	75.8	4588.1	17373.1
3.20	88.8	9.89	311.1	96758.3	275.0	45.2	4211.7	18586.2
3.36	90.3	10.79	317.6	100050.7	286.3	68.1	4046.2	19007.2
3.53	91.0	11.70	318.3	101283.1	290.1	29.6	4347.0	21083.8
3.70	91.5	12.62	325.0	105605.5	308.7	91.3	4747.1	22721.3
3.85	92.7	13.45	328.6	107945.1	318.6	58.5	4415.2	24163.0
4.01	93.3	14.30	330.1	109726.6	320.6	32.1	3202.0	24703.0
4.18	92.7	15.31	329.9	108834.0	325.7	43.7	3482.0	25647.3
4.35	92.9	16.24	330.6	109276.5	327.6	25.1	2725.7	26346.8
4.51	92.4	17.16	330.3	109124.5	332.0	26.3	2692.0	27133.5
4.68	91.0	18.07	329.0	108241.0	337.8	41.7	2466.6	27795.7
4.85	90.2	18.97	328.6	107945.1	346.1	36.5	2069.3	29042.2
5.00	89.6	19.78	328.8	108096.3	354.6	48.8	3561.2	30220.7
5.16	88.4	20.67	326.5	105628.4	357.0	8.0	1075.2	30725.3
5.33	86.8	21.53	323.9	104878.8	360.8	22.9	1679.6	31281.3
5.50	85.3	22.39	320.3	102566.5	360.2	9.5	1135.9	31324.5
5.66	83.8	23.22	318.5	101423.1	366.3	36.9	2320.8	32083.5
5.83	82.6	24.05	315.3	99439.3	366.0	4.7	904.5	32213.2
6.00	81.5	24.87	313.5	98307.3	368.9	17.3	1406.8	32679.3
6.15	80.9	25.67	312.4	97606.3	371.2	14.0	1410.0	33142.6
6.31	80.0	26.39	310.6	96484.8	372.3	7.1	1033.0	33447.9
6.48	79.1	27.19	310.6	96484.8	379.3	35.4	1937.7	34215.4
6.65	78.1	27.97	306.8	94132.4	377.4	2.1	1537.5	34338.1
6.81	76.6	28.73	305.5	93305.8	383.8	37.8	2572.2	35169.7
6.98	75.0	29.48	301.9	91119.5	384.7	12.8	1283.6	35414.3
7.13	73.3	30.14	297.8	88646.8	383.9	9.2	1088.3	35400.4
7.30	71.7	30.86	294.2	85565.4	384.5	3.6	479.1	35559.3
7.46	70.1	31.56	292.6	85638.2	392.1	25.5	1082.9	36417.6
7.63	68.7	32.25	288.4	83145.7	390.0	-6.1	-275.8	36143.6

DATA FILE - NBL1104

TIME	AIR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP THIES TEMP RISE WALLS & CEILING	TEMP SOD WALLS & CEILING
7.09	66.8	32.91	204.3	80920.8	391.2	7.2	206.8	36238.3
7.09	65.2	33.57	280.5	70557.8	390.5	2.4	79.5	36092.5
8.13	63.8	34.21	277.3	76095.3	390.7	1.3	-136.5	36046.7
8.30	61.7	34.02	271.0	73430.2	390.1	4.3	1331.4	35923.7
8.45	59.5	35.36	264.7	70044.9	382.5	-7.5	541.9	35376.1
8.61	57.5	35.93	260.8	68027.1	383.2	11.1	228.2	35278.5
8.70	55.8	36.49	257.2	66141.6	385.4	6.5	-191.3	35376.7
8.95	54.7	37.04	256.7	65905.2	391.8	31.7	125.3	35302.9
9.11	53.3	37.57	251.1	63031.1	396.7	-23.8	-1040.9	34577.4
9.29	51.0	38.08	244.9	59990.7	384.1	-8.9	-1021.8	34065.1
9.43	48.6	38.52	239.6	56910.9	382.9	-15.5	-1232.2	33853.2
9.60	47.3	38.99	234.9	55173.3	382.4	-9.4	-1693.0	33911.5
9.76	45.3	39.44	230.1	52955.2	380.8	-3.0	-744.9	33491.4
9.93	43.8	39.80	225.7	50931.5	378.1	-16.4	-1530.5	32977.4
10.10	42.3	40.30	221.4	49013.5	375.7	-14.6	-1341.0	32528.4
10.26	41.9	40.72	221.6	49111.0	379.8	18.2	180.4	32621.3
10.41	40.6	41.09	217.6	47332.4	377.0	-40.9	-2812.0	32278.4
10.50	39.5	41.49	214.4	45971.6	376.8	-8.0	-945.2	32127.6
10.75	38.5	41.87	211.1	44542.1	374.2	-15.9	-1343.5	31677.9
10.91	35.9	42.23	200.4	40140.1	366.3	-60.4	-701.8	31285.1
11.08	33.3	42.56	196.5	38639.8	367.7	8.2	-157.6	31227.5
11.25	31.9	42.88	191.9	36833.3	364.9	-10.5	-1005.0	30729.7
11.41	30.6	43.19	188.6	35570.0	365.9	-0.1	-352.9	30771.5
11.55	29.5	43.45	185.9	34573.7	363.9	8.7	-1064.4	29933.5
11.73	28.5	43.74	181.3	32869.7	359.8	-24.8	-1755.2	29340.3
11.90	27.5	44.01	170.4	31840.8	357.6	-6.2	-775.7	28912.8
12.06	26.4	44.20	175.1	30674.0	356.4	-13.9	-1320.1	28627.1
12.23	26.6	44.54	175.4	30754.6	357.1	-22.6	-1095.7	28715.0
12.40	25.5	44.80	171.9	29532.4	353.3	-16.3	-1309.8	28115.4
12.55	25.0	45.02	169.7	28784.5	350.1	-21.3	-1706.2	27599.5
12.71	23.9	45.26	165.5	27386.9	345.3	-22.1	-1518.2	26917.7
12.88	24.0	45.50	167.0	27902.4	349.9	7.2	183.4	27557.3
13.05	23.7	45.74	165.5	27393.6	347.2	-22.3	-1634.3	26962.8
13.21	23.1	45.97	162.7	26458.3	342.8	-26.7	-1975.6	26298.3
13.38	22.3	46.19	160.3	25683.3	341.5	-14.4	-1059.7	26094.7
13.53	20.3	46.38	150.6	22692.4	331.5	-44.1	-726.4	25138.1
13.70	10.6	46.56	146.7	21520.9	328.0	-1.0	-147.5	24637.3
13.86	17.7	46.74	143.2	20509.1	324.2	-3.0	-542.6	24024.3
14.03	17.0	46.91	140.2	19642.0	320.7	-14.5	-991.1	23543.4
14.20	16.4	47.07	140.6	19762.7	325.3	34.6	792.7	23568.9
14.35	16.2	47.22	137.8	18975.1	320.7	-23.5	-1550.3	22956.8
14.51	15.3	47.37	134.1	17969.4	317.3	-20.3	-916.1	22615.3
14.58	14.6	47.52	131.2	17213.4	311.3	-2.7	-627.2	21695.3
14.85	15.0	47.67	130.3	16985.9	306.1	-20.9	-1345.9	21141.1
15.01	11.3	47.81	128.8	16594.6	306.1	-13.4	-941.6	21102.0
15.18	13.5	47.95	126.5	15909.6	306.4	-12.5	-1203.5	21078.7
15.33	13.1	48.06	125.2	15655.0	305.5	-20.6	-1376.5	20933.9

DATA TABLE - REACTION

TIME	RHP IN	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WATERS A CELL ONE	TEMP DIFF WATERS A CELL ONE	TEMP DIFFS	
							TEMP DIFF WATERS A CELL ONE	TEMP DIFF WATERS A CELL ONE
15.50	12.0	48.19	125.0	15625.0	295.1	2.4	-404.3	20000.0
15.66	12.3	48.22	121.3	14701.0	291.0	29.0	-1520.4	20392.9
15.83	11.9	48.43	120.4	14496.2	300.7	-10.2	-763.7	20207.3
16.00	11.6	48.55	119.1	14184.8	299.6	5.9	-505.1	19800.3
16.16	10.2	48.65	102.3	10461.3	293.0	-26.7	-679.2	18420.1
16.33	9.2	48.75	107.6	11567.0	282.3	-17.5	-955.6	1853.4
16.48	8.5	48.82	105.0	11025.0	282.1	6.2	-94.6	18190.1
16.65	8.2	48.90	105.0	11025.0	284.5	-18.8	-841.5	18546.8
16.81	7.8	48.90	105.0	11025.0	287.6	38.7	-846.8	18345.4
16.99	8.1	49.06	104.3	10878.5	282.8	-29.2	-1665.3	17784.1
17.15	7.7	49.14	103.2	10650.4	282.3	-9.9	-790.3	17647.2
17.30	7.4	49.21	101.9	10389.7	280.6	-11.0	-693.3	17438.2
17.46	8.0	49.29	102.6	10528.8	279.5	-40.1	-1702.2	17426.5
17.63	7.4	49.36	101.3	10263.7	278.4	-6.4	-522.7	17249.3
17.80	7.4	49.43	100.2	10040.0	275.3	-12.3	-712.5	16880.6
17.96	7.3	49.51	100.2	10040.0	276.5	-12.7	-742.6	17007.0
18.13	7.4	49.58	100.5	10092.2	275.5	-12.5	-942.0	16809.8
18.28	7.1	49.64	97.9	9576.6	270.2	-20.9	-1157.0	16210.8
18.45	6.8	49.71	96.3	9277.5	266.2	-10.4	-624.1	15759.2
18.61	6.4	49.78	94.6	8947.3	265.3	-11.8	-620.7	15665.0
18.78	5.5	49.83	87.2	7603.8	253.6	-36.9	-129.8	14817.0
18.93	4.5	49.87	85.9	7378.8	253.2	-2.9	-298.4	14726.3
19.10	4.1	49.91	85.0	7225.0	253.2	6.7	-103.7	14568.6
19.26	4.0	49.95	84.8	7192.7	254.7	-4.0	-477.6	14634.8
19.43	4.0	49.99	86.3	7452.9	257.7	17.7	-123.4	14609.1
19.60	4.2	50.03	84.4	7126.6	252.9	-15.4	-666.6	14153.9
19.76	4.1	50.08	84.2	7084.6	252.9	-20.1	-1045.6	14143.3
19.91	3.8	50.11	83.5	6977.3	252.7	-9.0	-703.3	14047.0
20.08	4.3	50.15	83.8	7017.4	250.8	-31.4	-1122.8	13989.4
20.25	4.0	50.19	83.8	7017.4	252.0	-6.2	-370.5	14004.2
20.41	3.8	50.23	82.0	6728.9	247.7	-12.5	-504.3	13656.0
20.56	3.8	50.26	81.8	6694.5	246.8	-13.4	-819.1	13516.5
20.73	3.7	50.30	80.7	6515.7	243.5	-6.2	-421.7	13153.9
20.90	3.7	50.34	80.1	6409.6	241.2	-7.3	-383.6	12918.6
21.05	3.6	50.37	80.1	6409.6	241.9	4.6	-50.8	12904.7

DATA FILE = NBL210W

TIME	RHR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES	
							TEMP RISE WALLS & CEILING	TEMP SPD WALLS & CEILING
0.25	0.0	0.00	5.7	32.3	19.8	1499.6	6170.8	135.9
0.50	0.0	0.00	8.3	69.6	25.3	21.4	77.2	105.2
0.75	1.2	0.02	13.7	106.9	28.9	12.8	226.5	221.9
1.00	13.3	0.22	67.9	4610.4	61.1	133.2	2017.1	090.3
1.25	43.2	0.87	173.8	30209.9	129.2	270.0	0997.3	4189.8
1.50	64.5	1.83	233.8	54648.4	163.4	157.4	8866.3	7844.2
1.75	78.3	3.01	276.0	76148.4	212.0	152.6	8500.3	12010.0
2.00	90.7	4.37	312.0	97325.3	251.1	150.0	8939.1	16294.3
2.25	102.3	5.90	340.9	116178.7	276.9	107.3	10017.0	20780.6
2.50	110.5	7.56	366.9	134615.6	315.2	155.4	11354.7	26061.8
2.75	118.6	9.34	391.6	153366.2	356.2	164.3	11549.7	30975.3
3.00	123.9	11.20	406.2	165006.6	385.0	110.8	11223.9	36458.0
3.25	131.0	13.16	425.3	180863.1	409.7	89.5	8966.2	41079.5
3.50	134.5	15.18	433.9	188225.8	422.0	54.0	8078.8	44736.9
3.75	135.8	17.22	439.4	193098.7	411.9	95.3	12432.5	49974.1
4.00	138.2	19.29	448.8	201394.5	464.7	84.3	10220.6	55265.5
4.25	133.5	21.30	442.6	195885.9	479.6	97.5	10505.6	58590.3
4.50	128.1	23.22	437.0	190977.7	499.6	73.2	4970.2	61163.0
4.75	123.4	25.07	427.7	182910.2	503.1	-3.8	1022.6	62541.8
5.00	112.3	26.75	402.8	162215.6	491.2	-11.6	1221.6	61170.6
5.25	102.5	28.29	386.3	149220.0	496.9	31.6	-1856.6	59401.9
5.50	97.2	29.75	373.9	139793.7	494.9	-21.3	-4021.8	57757.8
5.75	88.7	31.08	348.1	121173.6	476.5	-56.1	2117.9	56613.5
6.00	84.8	32.35	347.2	120547.8	492.5	37.5	-472.9	56766.6
6.25	84.8	33.62	345.6	119467.0	493.9	-21.3	-1193.6	57476.4
6.50	82.7	34.86	340.4	115872.2	491.1	-6.8	390.1	57411.6
6.75	82.4	36.10	340.9	116178.7	492.6	23.9	707.9	56851.0
7.00	83.4	37.35	344.0	118315.4	502.5	19.9	2263.9	58749.5
7.25	79.6	38.54	332.4	110463.2	491.8	-18.2	2109.7	58061.0
7.50	75.0	39.67	323.2	104458.2	488.9	14.9	1436.5	57393.0
7.75	72.5	40.76	321.0	103008.9	502.7	30.9	938.0	58865.4
8.00	69.7	41.80	315.1	99306.9	505.9	1.7	-707.6	58880.5
8.25	65.0	42.78	301.9	91131.5	498.8	-28.7	-775.6	58239.4
8.50	61.7	43.70	295.7	87432.6	499.1	8.2	-652.4	57527.8
8.75	59.8	44.60	292.0	85246.5	506.2	-5.3	-494.6	58952.8
9.00	57.0	45.45	285.1	81276.3	504.1	-3.7	-338.5	58542.0
9.25	54.7	46.27	278.0	77278.4	499.3	-15.0	129.1	58215.0
9.50	55.2	47.10	282.2	79614.3	507.8	29.5	718.6	58433.3
9.75	53.6	47.91	274.5	75350.3	496.0	-29.1	-606.0	56997.1
10.00	51.8	48.68	272.0	73989.4	498.8	13.4	188.3	56953.1
10.25	50.8	49.44	269.2	72463.3	497.6	8.6	-134.5	56172.3
10.50	49.5	50.19	266.4	70953.0	499.9	2.4	-250.2	56270.3
10.75	47.1	50.89	258.3	66734.4	489.3	-33.7	-2502.8	54405.8
11.00	45.3	51.57	254.0	64531.2	489.8	4.5	-125.3	54223.7
11.25	44.0	52.23	251.0	62980.9	489.6	0.9	-470.5	53923.8
11.50	42.4	52.87	244.7	59883.0	481.9	-35.2	-1969.6	52926.2
11.75	42.8	53.51	245.9	60447.1	481.5	4.8	448.7	52831.1

DATA FILE = RELATION

TIME	PHR /W	ENERGY HJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES TEMP RISE WALLS & CEILING	TEMP GOOD WALLS & CEILING
12.00	46.7	54.21	255.9	65459.2	403.2	17.9	1200.6	50979.5
12.25	52.4	54.99	271.4	73036.2	494.7	50.6	4648.9	54062.9
12.50	59.2	55.08	288.5	82932.3	582.5	24.7	4947.8	57139.0
12.75	65.8	56.87	305.3	93001.3	513.0	39.5	4341.5	59301.8
13.00	68.2	57.89	314.9	99168.3	531.2	68.4	7583.8	63240.2
13.25	69.3	58.93	317.4	100730.1	539.4	8.0	3347.3	64067.5
13.50	69.9	59.90	322.2	103800.0	545.3	50.8	5253.8	67181.0
13.75	70.1	61.03	325.7	106954.4	560.0	38.5	4092.3	70141.7
14.00	67.6	62.05	321.2	103150.2	561.1	11.2	754.4	70128.9
14.25	64.7	63.02	312.0	97344.0	549.0	-26.1	-1745.1	67904.0
14.50	61.8	63.94	306.4	93874.8	553.3	20.3	1694.1	68063.5
14.75	59.1	64.83	299.9	89922.0	552.5	-18.8	-950.1	68403.0
15.00	56.1	65.67	294.4	86641.9	556.2	-9.7	-1578.3	68965.6
15.25	53.8	66.48	287.2	82455.1	549.3	-0.7	-156.6	67404.8
15.50	52.6	67.27	285.5	81550.2	556.7	27.1	1975.4	68238.8
15.75	50.9	68.03	281.4	79186.0	551.7	-26.8	-3215.9	66995.2
16.00	48.4	68.76	272.5	74256.3	541.0	-25.0	-2005.1	64981.2
16.25	44.9	69.43	262.5	68927.3	531.5	-33.3	-3086.1	63019.6
16.50	42.6	70.07	255.4	65249.6	524.5	7.6	-501.7	60789.7
16.75	39.9	70.67	249.7	62365.1	529.6	-17.4	-1890.7	61826.3
17.00	37.2	71.23	240.8	57970.2	518.4	-30.3	-3700.6	59523.5
17.25	35.8	71.76	239.6	57403.4	527.9	0.4	-1290.1	60723.1
17.50	34.2	72.28	235.4	55399.0	528.3	-11.8	-1817.3	60489.4
17.75	32.2	72.76	226.0	51094.1	511.5	-44.9	-3053.3	57561.6
18.00	32.1	73.24	226.5	51302.3	512.4	3.4	-649.3	57193.4
18.25	32.4	73.73	228.5	52216.8	519.2	7.1	309.3	58295.9
18.50	32.1	74.21	225.0	50638.5	507.4	-26.9	-1964.0	56242.4
18.75	31.0	74.67	220.7	48726.1	500.5	-16.6	-1473.3	54868.0
19.00	30.8	75.14	219.3	48083.7	496.6	-4.2	-585.3	54014.2
19.25	30.3	75.59	219.5	48175.9	502.2	4.7	-142.0	54799.0
19.50	30.1	76.04	218.7	47834.1	503.1	9.8	794.0	54788.9
19.75	29.6	76.48	214.1	45847.4	486.9	-19.9	-2124.4	51403.5
20.00	29.7	76.93	214.5	45988.8	489.3	-6.1	-355.5	52016.5
20.25	29.7	77.38	215.7	46513.5	492.9	-16.7	-1508.9	52789.0
20.50	29.8	77.82	213.1	45411.6	480.9	-30.4	-2480.0	50639.2
20.75	28.8	78.25	211.2	44601.2	484.0	14.7	646.9	50773.3
21.00	29.3	78.69	212.2	45028.8	485.6	8.5	1350.8	51120.3
21.25	29.1	79.13	211.1	44550.5	479.9	-29.5	-2462.4	50181.7
21.50	28.4	79.55	208.1	43284.8	470.0	-20.9	-520.7	50351.6
21.75	29.5	80.00	214.8	46126.2	493.6	62.3	4999.8	52371.3
22.00	30.9	80.46	219.5	48175.9	498.0	2.0	380.4	53322.1
22.25	30.9	80.92	215.7	46513.5	483.0	-48.8	-2259.6	51193.0
22.50	29.9	81.37	212.8	45262.6	483.6	-6.7	1350.1	51996.4
22.75	31.5	81.84	220.6	48673.2	502.4	85.4	8594.5	54171.5
23.00	30.7	82.30	218.0	47532.7	492.0	-61.6	-4921.1	52591.7
23.25	28.9	82.71	208.3	43376.4	477.7	-44.0	-385.3	50021.3
23.50	26.4	83.13	205.1	42082.4	485.2	28.1	2193.1	52000.3

TIME	RHF KW	ENERGY MJ	STAMP TIME	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP. RISE		TEMP. SUD WALLS & CEILING
						WALLS & CEILING	TEMP. RISE	
22.75	25.9	03.52	204.5	41000.0	405.1	26.1	929.9	51019.7
24.00	26.5	03.02	200.6	42518.1	498.4	13.3	558.0	52016.5
24.25	29.0	04.34	211.6	44707.3	496.8	19.9	-917.4	52004.9
24.50	26.5	04.74	202.8	44127.0	475.1	-73.6	-4545.2	49337.3
24.75	26.6	05.14	205.1	42002.4	404.4	59.9	4602.9	50101.7
25.00	26.5	05.54	204.4	41763.0	479.0	43.1	-3346.5	49592.7
25.25	25.1	05.91	193.7	37504.2	453.2	-50.5	-2597.0	45150.7
25.50	22.5	06.25	195.1	34259.4	445.3	6.2	1244.9	42909.7
25.75	24.0	06.61	192.9	37206.6	464.7	20.3	3706.6	40539.7
26.00	21.6	06.93	101.8	33051.9	412.8	-72.0	-3091.9	43060.6
26.25	10.9	07.22	173.4	30071.0	435.9	3.0	616.3	41903.1
26.50	17.8	07.40	174.5	30460.7	450.0	27.5	921.5	42390.6
26.75	15.9	07.74	160.3	28310.2	438.7	-74.2	-4210.4	42225.9
27.00	14.8	07.96	152.4	26357.5	434.8	2.1	-74.9	41594.0
27.25	14.6	08.10	164.1	26928.8	444.1	20.6	1242.1	41903.3
27.50	14.9	08.40	163.8	26830.4	440.3	-40.6	-3701.1	41461.1
27.75	14.1	08.61	158.2	25027.2	425.5	-47.9	-3779.7	38975.2
28.00	12.6	08.80	151.7	22997.7	410.8	-26.8	-1364.5	38106.8
28.25	11.1	08.97	146.4	21435.9	414.3	-11.6	-338.5	37620.0
28.50	10.6	09.13	147.2	21653.1	419.2	37.6	1716.2	37303.5
28.75	10.9	09.29	144.6	20897.6	409.1	-60.6	-3094.5	36195.4
29.00	9.5	09.43	140.3	19686.9	405.9	-13.1	-901.1	35046.8
29.25	9.1	09.57	140.7	19807.7	411.3	24.0	1005.7	35809.7
29.50	10.1	09.72	142.3	20246.4	400.2	-28.0	-1916.0	35417.7
29.75	8.8	09.86	133.9	17921.2	390.5	-30.6	-1666.4	32655.8
30.00	8.9	09.99	135.4	18335.9	394.4	-6.5	-594.4	33125.5
30.25	8.4	90.12	132.4	17521.8	387.4	-28.3	-2152.6	32034.5
30.50	0.2	90.24	129.8	16837.7	380.7	-24.6	-1716.2	31079.9
30.75	7.6	90.35	129.2	16697.8	383.3	10.4	198.3	31140.4
31.00	7.3	90.46	123.2	15183.2	366.4	-47.5	-2510.2	20983.8
31.25	7.2	90.57	125.4	15725.2	373.5	23.9	1204.6	22571.5
31.50	6.4	90.67	110.9	14127.7	359.7	-37.5	-1067.0	27753.0
31.75	6.2	90.76	121.0	14628.9	368.5	15.5	800.9	28732.2
32.00	5.2	90.84	116.4	13551.3	363.2	-32.7	-1089.1	28055.0
32.25	4.6	90.91	112.6	12678.8	355.7	-25.4	-1261.4	27218.1
32.50	4.2	90.97	110.4	12194.8	351.1	-11.6	-753.6	26604.9
32.75	4.4	91.04	111.6	12459.0	351.9	5.2	-24.6	26359.1
33.00	4.2	91.10	100.6	11789.6	344.1	-28.9	-1753.3	25369.6
33.25	4.1	91.15	108.8	11839.6	345.5	-3.3	-462.9	25401.9
33.50	3.5	91.21	107.2	11496.1	346.6	-20.1	-1407.1	25535.2
33.75	3.1	91.26	105.2					

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DATA FILE = NBL210W

TIME	RIP IN	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES TEMP RISE WALLS & CEILING	TEMP SOD WALLS & CEILING
35.50	1.7	91.51	92.4	8545.2	312.6	-20.8	-952.2	20994.3
35.75	1.3	91.53	94.0	8834.1	320.0	7.5	106.2	21679.9
36.00	1.2	91.55	92.6	8574.8	310.1	10.7	1062.7	21498.3
36.25	1.3	91.57	91.7	8414.4	313.7	-24.4	-1410.8	20994.7
36.50	0.8	91.58	90.5	8197.5	313.8	2.6	-12.0	20917.5

DATA FILE = NEBLELOW

TIME	RRR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP SMO WALLS & CEILING
0.25	0.0	0.00	-0.5	0.2	0.1	1170.1	284.2	66.0
0.50	0.0	0.00	1.9	3.5	3.0	10.2	-43.5	33.8
0.75	2.4	0.04	9.2	84.3	0.2	0.4	54.0	13.5
1.00	8.4	0.16	41.1	1686.7	23.0	97.7	622.3	152.1
1.25	23.3	0.51	110.0	12104.4	91.5	263.9	6007.6	2004.1
1.50	45.5	1.19	185.3	34343.5	158.7	282.0	11895.9	6540.3
1.75	67.7	2.21	251.0	62991.0	215.2	230.7	14202.7	12545.2
2.00	82.0	3.44	292.2	85322.5	251.8	142.0	8605.0	16479.1
2.25	88.7	4.77	311.8	97237.9	275.8	93.2	5087.9	19349.1
2.50	89.7	6.12	315.3	100950.3	290.0	52.5	4356.9	21559.0
2.75	88.9	7.45	318.1	101194.0	305.1	69.5	4199.3	23291.4
3.00	89.6	8.79	322.2	103787.1	318.3	43.8	2519.3	24794.9
3.25	90.8	10.16	327.1	106987.9	333.1	59.1	5013.9	27224.2
3.50	93.1	11.55	335.7	112707.9	350.6	63.1	5078.9	29917.1
3.75	94.7	12.97	342.1	117032.4	364.8	60.4	5053.7	31976.1
4.00	97.3	14.43	350.1	122598.0	377.2	40.3	3250.6	33904.8
4.25	99.3	15.92	356.2	126849.9	389.1	56.6	5227.9	36126.1
4.50	99.7	17.42	359.3	129082.1	400.1	51.1	4736.8	38192.7
4.75	100.7	18.93	363.6	13219.5	411.2	57.7	4978.8	40088.8
5.00	101.1	20.45	367.2	134828.5	426.5	47.9	4674.7	42946.6
5.25	90.3	21.92	362.9	131660.1	434.1	23.6	2828.7	44637.3
5.50	93.3	23.32	353.1	124707.9	436.7	12.7	688.0	44064.2
5.75	87.0	24.71	339.3	115124.5	434.6	-12.2	-1425.9	44294.2
6.01	81.9	25.94	327.8	107426.6	434.6	-2.4	-624.4	44065.3
6.26	77.0	27.10	316.8	100343.2	433.8	-10.1	-1439.2	43636.0
6.51	73.2	28.19	306.6	94028.1	425.8	-18.0	-2311.8	41876.8
6.76	69.3	29.23	296.1	87651.5	420.8	-15.8	-1003.8	41170.4
7.01	65.9	30.22	289.0	83492.1	421.8	-4.8	-1132.7	40969.1
7.26	64.1	31.18	283.8	80514.1	417.9	-9.1	-1300.7	40024.6
7.51	62.1	32.11	278.6	77595.7	417.8	11.1	1270.3	40180.4
7.76	60.9	33.03	276.1	76214.6	419.3	-1.1	5.6	40466.3
8.01	61.2	33.95	277.7	77089.5	422.9	12.3	1058.1	41076.6
8.26	62.5	34.88	280.7	78792.5	421.8	4.5	-289.7	40523.8
8.51	62.8	35.82	281.8	79433.8	426.6	12.4	1396.7	41496.9
8.76	61.4	36.75	280.2	78534.5	433.7	13.1	1186.1	42750.5
9.01	60.1	37.65	276.6	76524.2	429.7	-9.6	-1186.2	41064.7
9.26	59.2	38.54	274.3	75213.1	430.3	7.1	1069.7	42179.0
9.51	60.3	39.44	278.4	77233.3	438.2	22.4	2279.4	43596.1
9.76	62.7	40.38	285.6	81544.5	443.9	20.5	1570.2	44561.8
10.01	61.7	41.31	283.4	80321.2	446.5	10.6	1561.6	45318.2
10.26	59.8	42.20	279.1	77902.4	445.0	2.9	-121.1	44836.4
10.51	57.6	43.07	273.6	74840.5	443.1	-3.1	-801.1	44160.5
10.76	53.7	43.87	263.6	69485.0	442.0	-11.1	-271.1	44248.5
11.01	51.1	44.64	257.7	66404.1	441.5	2.5	-331.8	43857.0
11.26	49.0	45.38	251.6	63282.4	436.2	-18.6	-2416.9	42319.4
11.51	46.3	46.07	243.6	59336.1	432.1	-14.5	-1059.8	41859.1
11.70	43.8	46.77	237.2	56263.8	430.2	-2.8	-480.5	41397.3

DATA FILE = NBL310W

TIME	RUR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP SOD WALLS & CEILING
12.03	41.6	47.40	231.5	53569.1	429.2	-0.6	-030.1	41176.5
12.20	40.1	48.00	227.9	51915.6	429.9	0.4	-411.8	41039.0
12.53	39.3	48.59	224.0	50193.9	421.8	-21.2	-2108.3	39454.2
12.70	37.9	49.16	219.4	48153.9	418.4	-5.6	-431.7	38945.9
13.03	37.1	49.71	218.2	47615.6	421.7	2.2	-183.7	39300.8
13.20	35.9	50.25	214.5	46027.4	418.9	-13.8	-1350.7	38712.9
13.53	34.3	50.76	209.2	43760.5	414.5	-12.0	-841.7	38071.1
13.70	33.6	51.27	207.5	43054.6	413.4	4.5	-25.7	37612.2
14.03	31.7	51.74	201.5	40614.3	409.3	-23.3	-1777.3	36961.0
14.20	29.5	52.19	194.9	37996.0	407.9	-12.2	-308.6	37022.3
14.53	28.7	52.62	193.4	37384.2	407.6	1.0	-519.9	36589.3
14.70	27.8	53.03	189.3	35823.1	400.0	-23.7	-2100.7	35242.1
15.03	26.0	53.44	187.2	35040.1	404.7	7.5	061.6	36104.6
15.29	27.2	53.84	188.3	35453.1	403.7	-1.7	-510.5	35690.0
15.53	27.6	54.26	187.9	35321.4	397.9	-9.9	-1050.8	34600.6
15.70	27.8	54.67	188.0	35325.2	395.7	-11.1	-758.4	34302.8
16.03	27.8	55.09	188.8	35660.5	400.1	2.2	371.9	35106.5
16.20	28.2	55.51	189.6	35948.2	399.0	4.6	287.3	34802.7
16.53	28.5	55.94	190.9	36454.3	400.0	-5.0	-629.6	34918.8
16.70	28.8	56.37	190.6	36328.4	395.4	-9.9	-328.3	34533.3
17.03	29.9	56.82	194.2	37725.3	398.4	10.3	571.3	34698.4
17.28	31.6	57.30	197.9	39156.5	395.0	-4.7	-686.7	33970.8
17.53	32.0	57.78	197.3	38935.2	389.5	-19.7	-877.3	33300.8
17.70	33.1	58.27	201.9	40747.5	396.9	29.6	2317.9	34330.7
18.03	34.4	58.79	205.1	42057.8	395.6	-12.1	-842.2	34146.5
18.28	34.1	59.30	204.6	41877.5	398.3	4.1	990.9	34855.9
18.53	34.6	59.82	207.4	43018.9	404.7	28.0	2392.5	35891.0
18.70	35.6	60.35	208.4	43434.7	396.1	-21.2	-1319.7	34578.7
19.03	36.5	60.90	212.3	45075.5	404.1	27.6	2378.4	35920.3
19.28	39.5	61.49	221.7	49142.0	412.3	39.4	3259.3	37041.9
19.53	42.1	62.13	227.4	51710.8	406.9	-14.7	-1268.9	36082.1
19.70	43.7	62.78	230.9	53310.2	405.8	-4.3	150.4	36102.0
20.05	44.8	63.50	235.1	55257.9	413.5	13.8	2021.8	37769.7
20.30	45.7	64.18	239.5	57355.5	422.6	41.0	3691.5	39363.9
20.55	48.5	64.91	247.6	61300.8	426.7	23.2	1761.6	39820.9
20.80	49.4	65.65	250.9	62935.8	435.3	12.1	2655.7	41931.1
21.05	51.3	66.42	256.8	65941.1	437.2	25.5	2011.5	42031.6
21.30	53.1	67.22	260.7	67943.6	434.4	-2.3	-202.1	41521.3
21.55	54.0	68.03	261.9	68596.8	432.8	-11.1	-27.3	41566.0
21.80	54.3	68.84	265.0	70209.1	442.9	38.4	3430.4	43122.2
22.05	53.0	69.64	261.5	68356.1	439.3	-16.9	-1150.9	42550.5
22.30	51.0	70.40	255.9	65479.7	439.8	-2.3	1200.6	43239.8
22.55	49.9	71.15	255.4	65244.5	446.0	24.5	1803.5	44061.8
22.80	48.9	71.89	251.7	63342.8	439.2	-20.3	-1659.8	42865.4
23.05	47.3	72.60	249.5	62255.2	449.0	19.1	1801.6	44619.9
23.30	46.9	73.30	248.5	61747.3	447.1	10.4	439.5	43065.3
23.55	45.9	73.99	244.6	59843.8	439.6	-31.7	-3240.5	42300.2

NO. 10 C-100 - DEBURTOP

TIME	HUR IN	ENERGY BT	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS A CELL DUG	TEMP WALL WALLS A CELL DUG	TEMP WALL WALLS A CELL DUG	TEMP WALL WALLS A CELL DUG
23.00	44.6	74.66	220.3	57250.1	432.2	22.0	-1600.7	41191.7
24.05	42.0	75.29	223.0	54307.6	435.4	6.1	1316.7	42995.2
24.30	40.5	75.90	220.6	52157.9	437.0	10.3	1021.5	42016.0
24.55	39.0	76.49	226.2	51152.9	430.7	20.2	-2756.0	40615.5
24.00	36.5	77.03	213.1	48413.6	432.5	-1.9	262.3	41191.6
25.05	35.4	77.57	215.9	46529.9	429.3	-0.0	-1103.7	40316.4
25.30	34.6	78.09	211.4	44624.2	410.1	-40.5	-3751.4	38106.3
25.55	32.8	78.50	204.6	41859.3	412.6	-19.6	-862.9	37538.0
26.00	32.1	79.06	205.2	42102.9	421.4	21.6	1303.1	38512.0
26.05	30.9	79.52	199.7	39896.1	411.0	-27.9	-2061.7	36850.1
26.30	29.1	79.96	194.9	37986.0	412.4	-5.8	-97.7	37251.6
26.55	28.2	80.30	193.5	37422.9	415.0	15.1	963.7	37394.3
26.01	27.5	80.82	180.0	35359.0	400.3	-40.0	-3455.3	35050.5
27.05	25.8	81.21	184.7	34128.9	404.9	10.2	1281.1	35684.8
27.31	25.3	81.59	182.5	33320.9	400.7	-7.9	-957.9	34795.8
27.56	24.8	81.96	179.2	32123.4	392.0	-32.3	-2047.7	33243.3
27.01	23.2	82.31	173.9	30234.3	389.0	-25.4	-1549.2	32920.2
28.06	21.4	82.63	168.9	28510.3	389.0	-4.4	-69.7	33054.1
28.31	20.6	82.94	167.7	28106.5	391.3	13.2	650.0	33082.4
28.56	20.4	83.24	165.3	27337.3	383.4	-26.7	-2354.7	31704.3
28.01	18.7	83.52	158.5	25112.7	378.8	-20.6	-467.0	31368.8
29.06	18.5	83.80	158.6	25141.3	377.5	8.0	177.6	30812.6
29.31	18.6	84.08	156.6	24523.6	369.6	-31.6	-2363.5	29575.2
29.56	17.8	84.35	154.3	23814.7	369.4	-9.6	-441.9	29670.7
29.01	17.6	84.61	154.4	23848.6	372.1	10.9	694.0	29950.4
30.06	17.8	84.88	152.5	23247.1	362.7	-33.5	-2172.7	28623.8
30.31	16.7	85.13	149.8	22425.1	364.1	-0.9	140.4	28927.3
30.56	16.2	85.37	150.3	22590.1	370.6	23.7	1487.7	29584.5
30.01	15.9	85.61	146.8	21556.1	361.3	-37.1	-2282.4	28323.7
31.06	15.2	85.84	144.8	20952.6	360.4	5.3	407.8	28201.9
31.31	15.1	86.07	144.5	20880.9	359.4	-4.3	-522.6	27902.3
31.56	15.3	86.30	142.7	20351.9	349.7	-24.9	-1936.5	26433.5
31.01	14.9	86.52	140.0	19586.0	344.7	-27.0	-1496.1	25857.7
32.06	14.4	86.74	138.1	19071.6	342.8	-3.4	-285.3	25562.6
32.31	13.6	86.94	136.1	18500.8	345.3	1.2	215.2	25969.3
32.56	14.0	87.15	138.8	19259.9	349.6	8.6	299.7	26330.7
32.01	13.6	87.35	135.0	18227.7	344.0	-42.6	-1170.7	26070.4
33.06	12.8	87.55	134.9	18195.3	345.8	10.4	639.9	25801.8
33.31	13.7	87.75	135.6	18395.5	340.9	-7.9	-833.1	24820.8
33.56	13.7	87.96	133.9	17926.5	334.3	-29.2	-1729.6	24122.9
33.01	13.2	88.15	132.8	17638.5	335.9	0.4	639.4	24330.5
34.06	13.4	88.36	131.9	17408.2	329.3	-28.3	-2036.6	23363.9
34.33	12.8	88.56	128.0	16394.2	323.3	-22.7	-825.0	22700.5
34.50	11.4	88.73	125.3	15719.1	326.5	10.1	404.0	23169.1
34.03	11.7	88.90	125.1	15652.5	321.4	-15.8	-1427.0	22277.2
35.08	11.2	89.07	122.1	14906.0	317.6	-21.8	-840.7	22019.5
35.33	10.7	89.23	122.2	14928.0	320.9	24.5	1313.4	22115.4

DATA FILE - NDL310W

TIME	DIR HW	ENERGY HJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIME'S WALLS & CEILING	TEMP END WALLS & CEILING
35.58	10.8	89.39	121.3	14721.0	317.6	-27.0	-1719.3	21650.2
35.83	10.6	89.55	119.0	14170.5	311.4	-17.8	-1123.0	20883.9
36.08	9.7	89.70	115.8	13412.0	310.2	-13.6	-416.9	20904.8
36.33	8.9	89.83	114.5	13114.8	312.1	0.4	-86.3	21068.0
36.58	9.5	89.97	114.8	13181.3	306.4	0.0	-264.6	20110.0
36.83	8.8	90.11	109.9	12085.8	299.5	-22.3	-777.3	19595.4
37.08	8.2	90.23	110.4	12181.5	303.3	17.7	797.7	19765.4
37.33	9.0	90.36	110.4	12179.3	295.0	-26.4	-1529.0	18670.8
37.58	8.8	90.50	107.7	11590.7	289.4	-31.6	-1729.0	18070.0
37.83	7.8	90.61	106.4	11316.7	293.2	10.5	605.5	18470.0
38.08	8.0	90.73	105.0	11014.5	286.2	-16.8	-1118.1	17577.0
38.33	7.7	90.85	102.5	10582.2	281.8	-30.9	-1169.0	17533.3
38.58	6.3	90.94	99.9	9976.0	285.3	9.4	519.2	17625.8
38.83	7.0	91.05	100.8	10168.7	281.4	-4.4	-614.2	16898.6
39.08	6.6	91.15	96.8	9376.0	273.8	-32.3	-1033.1	16312.1
39.33	5.4	91.23	94.8	8979.5	275.6	15.9	665.8	16360.2
39.58	5.7	91.31	95.4	9105.0	275.7	-3.9	-377.8	16262.3
39.83	6.1	91.41	93.3	8712.4	265.0	-34.0	-1756.3	15101.4
40.08	6.3	91.50	91.1	8291.9	255.9	-36.2	-1399.5	14306.1
40.33	4.1	91.56	88.8	7890.8	269.6	29.7	2035.3	15809.5
40.58	4.2	91.62	89.3	7981.6	268.4	9.1	64.0	15406.8
40.83	4.7	91.70	87.9	7731.7	260.4	-25.7	-1252.8	14571.6
41.08	4.4	91.76	87.5	7656.3	261.6	-3.8	-265.0	14657.4
41.33	4.6	91.83	87.2	7598.6	257.4	-12.5	-769.0	14138.9
41.58	5.1	91.91	87.1	7579.4	251.6	-23.2	-1302.6	13473.1
41.83	4.3	91.97	84.5	7133.5	251.5	-4.9	121.7	13593.1
42.08	4.6	92.04	85.4	7296.6	251.2	12.4	833.5	13472.3
42.33	5.0	92.12	84.1	7077.9	243.7	-41.3	-1863.8	12695.9
42.58	4.1	92.18	81.2	6593.4	241.5	-8.8	-161.4	12574.0
42.83	4.5	92.25	80.9	6532.3	235.1	-14.2	-849.5	11860.4
43.08	3.9	92.30	79.7	6350.5	238.6	-1.8	-49.5	12275.1
43.33	3.2	92.35	78.8	6214.2	241.4	6.8	234.4	12489.0
43.58	3.4	92.40	78.2	6109.0	238.1	-2.3	-198.0	12107.4
43.83	3.6	92.46	77.9	6074.6	235.4	-8.3	-456.1	11817.0
44.08	4.0	92.52	78.1	6091.8	231.6	-17.6	-906.8	11407.5
44.33	3.9	92.57	75.7	5724.4	225.4	-24.7	-752.3	10932.2
44.58	2.9	92.62	73.9	5464.2	227.0	10.8	427.9	11051.7
44.83	3.6	92.67	74.8	5593.5	223.9	-16.9	-70.2	10705.1
45.08	3.2	92.72	73.4	5386.1	224.0	-10.5	-226.7	10822.0
45.33	2.4	92.76	72.7	5288.2	227.3	19.7	793.3	11000.0
45.58	4.1	92.82	75.1	5640.0	219.8	-9.9	-129.9	10316.1
45.83	3.0	92.86	69.1	4779.0	215.2	-34.1	-25.5	10121.3
46.08	2.6	92.90	71.4	5100.8	219.7	17.9	584.3	10252.5
46.33	4.0	92.96	72.9	5317.3	213.1	-17.4	-721.0	9645.2
46.58	3.9	93.02	69.3	4806.6	203.4	-36.3	-921.1	8931.6
46.83	2.8	93.06	69.4	4821.9	210.1	20.7	1298.3	9308.0
47.08	3.7	93.12	69.8	4867.9	204.5	-24.6	-1040.7	8896.7

[illegible]

TIME	RIP	ENERGY	STORY	STAFF	TEMP	TEMP		TEMP		TEMP	
						HALLS A	CELL 100	HALLS A	CELL 100	HALLS A	CELL 100
47.25	3.1	93.16	66.9	4481.0	201.9	14.6	-203.3	0773.1	0773.1	0773.1	0773.1
47.30	1.9	93.19	65.2	4252.3	207.1	11.5	558.0	0932.0	0932.0	0932.0	0932.0
47.35	2.2	93.22	66.2	4381.1	206.9	-0.4	-161.2	0915.4	0915.4	0915.4	0915.4
48.10	3.8	93.29	68.6	4685.4	198.0	-10.4	-111.1	0939.6	0939.6	0939.6	0939.6
48.35	3.5	93.34	65.7	121.7	194.0	-29.5	-940.0	0936.1	0936.1	0936.1	0936.1
48.50	1.8	93.36	62.6	907.5	200.7	-2.3	694.2	0911.8	0911.8	0911.8	0911.8
48.85	2.9	93.41	66.1	4366.6	197.8	3.9	89.4	0864.6	0864.6	0864.6	0864.6
49.10	2.9	93.45	62.8	3945.1	199.3	-25.6	-604.3	7775.7	7775.7	7775.7	7775.7
49.35	0.7	93.46	59.1	3494.0	198.0	24.2	1502.6	0575.1	0575.1	0575.1	0575.1
49.60	3.0	93.51	65.4	4278.5	196.9	16.6	1930.0	0567.6	0567.6	0567.6	0567.6
49.85	2.2	93.54	59.0	3479.8	189.2	-48.4	-349.1	7807.0	7807.0	7807.0	7807.0
50.10	1.6	93.56	61.2	3740.5	194.2	39.9	2035.5	8041.1	8041.1	8041.1	8041.1
50.35	4.0	93.62	63.4	4023.4	109.9	-46.3	-1516.6	7061.1	7061.1	7061.1	7061.1
50.60	3.4	93.67	59.4	3529.5	173.8	-39.7	-792.7	6528.4	6528.4	6528.4	6528.4
50.85	3.1	93.72	62.7	3928.8	182.1	35.6	2105.2	7155.0	7155.0	7155.0	7155.0
51.10	4.0	93.78	61.4	3765.0	171.0	-35.7	-1302.8	6273.6	6273.6	6273.6	6273.6
51.35	1.9	93.81	53.4	2853.7	172.4	-10.9	1924.7	6885.3	6885.3	6885.3	6885.3
51.60	0.0	93.81	53.0	2006.9	181.6	43.5	1159.0	7228.0	7228.0	7228.0	7228.0
51.85	0.5	93.82	55.5	3076.9	185.7	29.7	1221.8	7325.9	7325.9	7325.9	7325.9
52.10	3.4	93.87	50.1	3372.1	168.7	-50.2	-1560.6	6996.1	6996.1	6996.1	6996.1
52.35	3.2	93.92	55.9	3123.7	161.8	-34.1	-982.4	5600.3	5600.3	5600.3	5600.3
52.60	1.1	93.93	50.2	2524.1	167.5	-2.1	1055.0	6511.1	6511.1	6511.1	6511.1
52.85	3.3	93.98	57.8	3355.1	165.0	14.8	1516.9	5041.4	5041.4	5041.4	5041.4
53.10	1.1	94.00	49.7	2470.1	160.2	-16.1	2011.7	6452.9	6452.9	6452.9	6452.9
53.35	0.0	94.00	49.2	2415.7	176.8	29.6	819.5	6804.7	6804.7	6804.7	6804.7
53.60	2.1	94.03	56.0	3137.1	174.0	16.9	2112.5	6575.4	6575.4	6575.4	6575.4
53.85	1.4	94.05	47.5	2256.3	163.2	-63.7	1134.8	6141.2	6141.2	6141.2	6141.2
54.10	0.0	94.05	51.3	2632.7	174.5	61.1	2662.2	6461.6	6461.6	6461.6	6461.6
54.35	1.7	94.08	53.1	2015.4	167.7	-20.7	-514.6	6947.9	6947.9	6947.9	6947.9
54.60	2.8	94.12	52.0	2792.1	156.7	-48.2	-1597.1	5223.8	5223.8	5223.8	5223.8
54.85	0.6	94.13	49.5	2446.3	163.5	18.0	846.0	5712.3	5712.3	5712.3	5712.3
55.10	2.0	94.16	51.4	2643.0	156.3	-6.2	18.4	5240.8	5240.8	5240.8	5240.8
55.35	2.7	94.20	49.7	2467.1	147.3	-47.5	-970.5	4684.5	4684.5	4684.5	4684.5
55.60	0.0	94.20	45.1	2033.1	161.5	30.3	2014.7	5084.7	5084.7	5084.7	5084.7
55.85	0.0	94.20	45.4	2062.1	166.2	29.7	604.3	5932.4	5932.4	5932.4	5932.4
56.10	2.0	94.23	52.0	2700.9	161.6	-6.9	961.9	5701.0	5701.0	5701.0	5701.0
56.35	3.3	94.28	50.2	2523.1	144.8	-78.5	-2094.9	4465.5	4465.5	4465.5	4465.5
56.60	0.5	94.29	43.6	1098.3	150.6	5.3	2314.1	5371.8	5371.8	5371.8	5371.8
56.85	2.5	94.33	51.6	2666.7	151.4	34.4	2951.4	5000.8	5000.8	5000.8	5000.8
57.10	2.8	94.37	46.9	2194.9	140.9	-63.6	-447.9	4336.8	4336.8	4336.8	4336.8
57.35	0.0	94.37	42.6	1813.1	153.7	43.0	1944.2	5337.7	5337.7	5337.7	5337.7
57.60	0.1	94.37	46.6	2173.4	158.1	37.5	1736.3	5299.4	5299.4	5299.4	5299.4
57.85	1.0	94.38	41.0	1684.3	145.6	-68.0	806.0	5055.4	5055.4	5055.4	5055.4
58.10	0.0	94.38	41.3	1702.4	155.9	45.4	960.6	5391.6	5391.6	5391.6	5391.6
58.35	1.0	94.40	47.2	2223.1	153.6	11.5	1543.7	5096.6	5096.6	5096.6	5096.6
58.60	3.0	94.45	48.1	2317.5	137.9	-50.0	-1435.1	4127.4	4127.4	4127.4	4127.4
58.86	0.1	94.45	42.8	1829.3	145.4	23.7	927.7	4513.3	4513.3	4513.3	4513.3

DATA FILE = NDL310W

TIME	AIR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP		TEMP RISE		TEMP TIMES		TEMP 500 WALLS & CEILING
					WALLS & CEILING	CEILING	WALLS & CEILING	CEILING	WALLS & CEILING	CEILING	
59.11	2.6	94.49	47.5	2253.4	137.8	-14.9	486.4	486.4	4271.9	4271.9	
59.36	3.0	94.53	43.0	1849.0	125.0	-71.3	-501.8	-501.8	3497.3	3497.3	

TABLE 1

DATA FILE = NDL15W

TIME	AIR KW	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES TEMP RISE WALLS & CEILING	TEMP SPD WALLS & CEILING
0.25	0.0	0.09	0.8	77.3	5.6	1440.7	2508.7	470.5
0.75	3.8	0.11	12.9	166.2	-1.3	-13.8	-88.8	59.7
1.00	7.6	0.23	33.8	1145.1	12.9	50.2	300.6	154.6
1.25	20.6	0.54	86.2	7437.3	47.8	143.9	4364.9	1314.9
1.50	39.4	1.13	162.4	26370.5	121.8	309.3	10864.1	5163.6
1.75	61.4	2.05	231.0	53365.6	106.4	225.1	10382.3	9446.1
2.00	72.2	3.13	257.3	66193.0	207.1	93.9	9975.4	13234.9
2.25	79.9	4.33	284.1	80707.1	239.0	145.3	10172.5	17518.7
2.50	90.7	5.69	318.6	101499.6	280.8	147.2	7451.5	20119.0
2.75	90.8	7.17	333.4	111128.9	294.7	71.5	14082.9	25112.6
3.00	104.4	8.74	357.6	127849.2	331.6	136.1	8718.0	29376.9
3.25	112.5	10.43	379.9	144308.8	362.7	138.0	10481.5	33918.9
3.50	119.4	12.22	398.4	158690.7	389.1	90.9	8946.7	38490.5
3.75	123.9	14.07	412.8	170420.4	416.0	105.1	8595.0	42570.0
4.00	126.9	15.98	421.9	177965.9	437.5	68.3	7766.7	47041.9
4.25	126.3	17.87	423.2	179081.3	454.1	66.6	9007.5	51378.0
4.50	123.5	19.72	420.1	176475.6	466.2	68.3	8678.9	54655.0
4.75	122.4	21.56	422.1	178134.6	480.0	59.8	4035.8	56263.3
5.00	121.1	23.38	420.2	176568.0	488.2	23.8	3064.6	58179.0
5.25	115.8	25.11	410.3	168329.7	495.9	33.1	5278.4	60600.4
5.50	108.3	26.74	394.0	155267.5	495.0	18.7	6200.8	62017.0
5.75	105.3	28.32	392.8	154323.3	505.5	21.7	-859.8	61008.4
6.00	99.6	29.81	379.6	144058.2	503.5	-19.1	-1642.9	60721.6
6.25	92.1	31.19	359.7	129369.7	491.1	-25.0	1846.7	59711.7
6.50	86.0	32.48	347.7	120860.5	480.5	14.0	1169.7	59033.4
6.75	85.7	33.77	349.4	122101.3	497.3	6.5	-1656.1	57984.4
7.00	81.1	34.98	336.3	113077.5	487.9	-35.4	-1069.9	56714.3
7.25	76.1	36.13	321.6	103445.9	478.5	-21.9	2490.8	56494.5
7.50	73.9	37.23	322.5	104019.2	491.6	52.1	958.3	55995.5
7.75	71.7	38.31	315.7	99650.2	487.6	-18.1	-1691.6	55235.1
8.00	70.4	39.36	313.3	98182.0	490.6	12.1	153.7	55137.0
8.25	68.1	40.39	305.3	93801.3	483.7	-38.8	-2423.5	54405.0
8.50	65.3	41.37	296.9	88173.4	473.8	-24.0	695.0	53633.6
8.75	64.9	42.34	300.8	90456.6	489.3	57.5	2878.0	54046.0
9.00	63.8	43.30	297.4	88434.9	486.4	-18.0	-1729.5	53773.3
9.25	61.6	44.22	288.8	83422.8	473.5	-58.6	-3190.7	52116.0
9.50	58.9	45.11	281.7	79377.4	469.2	2.8	1096.1	51657.3
9.75	59.1	45.99	285.6	81550.2	484.1	64.5	4484.5	52827.7
10.00	58.1	46.86	281.2	79050.9	475.4	-53.0	-3046.7	51926.0
10.25	56.6	47.71	277.0	76723.5	473.4	-5.5	901.1	52131.8
10.50	54.6	48.53	270.8	73327.2	470.4	-1.1	2505.8	52619.6
10.75	55.7	49.37	279.7	78226.5	497.4	86.0	7429.2	55250.6
11.00	54.8	50.19	275.3	75847.2	486.9	-49.8	-3784.7	53503.9
11.25	53.3	50.99	270.4	73132.4	479.3	-30.6	-1138.3	52763.5
11.50	51.4	51.76	265.4	70410.6	476.1	-1.5	592.8	52451.0
11.75	49.8	52.51	262.7	69032.3	479.0	11.5	537.1	52710.5
12.00	48.2	53.23	258.3	66729.2	478.8	6.2	795.6	52761.5

DATA FILE = NBL15W

TIME	INDR KW	ENERGY KJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES WALLS & CEILING	TEMP SQU WALLS & CEILING
12.25	47.3	53.94	257.2	65151.8	400.6	20.4	410.1	52243.0
12.75	45.5	55.30	252.5	63776.5	400.5	-10.2	-1174.3	52031.0
13.00	44.2	55.97	240.5	61732.4	476.5	-2.6	-618.9	51077.9
13.25	43.2	56.61	245.5	60280.1	473.8	-6.6	-1221.7	50220.7
13.51	42.2	57.29	242.8	59477.0	472.8	-5.8	-1133.8	49609.9
13.76	39.6	57.88	234.2	54858.4	467.3	-30.9	-1180.1	49359.5
14.01	37.9	58.45	230.0	52910.4	462.1	-9.9	-1738.5	47952.0
14.26	36.8	59.00	227.7	51065.5	455.5	2.9	-548.5	48144.7
14.51	36.7	59.56	226.7	51397.4	462.1	-9.4	-1206.3	47129.1
14.76	33.9	60.06	215.3	46367.0	451.7	-43.8	-261.4	46204.7
15.01	32.3	60.55	215.1	46268.0	459.2	18.7	216.0	46711.6
15.26	32.4	61.03	214.8	46121.9	458.3	-3.7	-949.0	46051.2
15.51	31.7	61.51	211.2	44597.0	450.9	-30.3	-3199.2	44841.1
15.76	31.1	61.98	208.1	43204.8	443.8	-26.5	-2413.0	43526.0
16.01	29.4	62.42	200.5	40180.2	433.5	-36.4	-1630.5	42236.8
16.26	27.5	62.83	195.9	38376.8	432.8	6.0	297.5	41994.6
16.51	26.6	63.23	193.7	37508.1	431.7	6.8	-346.0	41295.5
16.76	26.8	63.63	193.1	37295.3	427.0	-20.1	-1899.2	40459.4
17.01	25.6	64.01	187.4	35103.8	419.5	-33.0	-1507.0	39507.6
17.26	24.4	64.38	185.2	34280.5	420.6	13.0	173.4	39171.2
17.51	23.9	64.74	182.8	33426.8	416.7	-15.7	-1512.9	38410.4
17.76	23.2	65.09	180.2	32464.8	413.7	-18.6	-1610.5	37873.2
18.01	21.9	65.42	174.6	30471.2	406.4	-22.6	-1348.8	36860.1
18.26	21.7	65.74	175.9	30930.3	413.1	35.8	2117.5	37112.6
18.51	22.2	66.07	176.3	31088.7	409.6	-33.9	-2517.6	36591.5
18.76	20.1	66.38	162.4	26360.8	387.9	-69.2	-291.9	34191.3
19.01	18.3	66.65	163.2	26647.3	397.9	48.7	2342.8	34401.0
19.26	19.4	66.94	166.1	27589.2	400.0	-15.7	-746.6	34786.0
19.51	10.9	67.22	161.6	26121.0	386.9	-68.2	-4782.3	32859.7
19.76	17.4	67.48	154.4	23839.4	375.9	-35.2	-1783.2	31429.3
20.01	16.0	67.72	150.6	22677.3	374.5	-12.3	-811.8	31261.7
20.26	14.6	67.94	145.6	21190.6	370.3	-14.6	-655.6	30908.8
20.76	13.7	68.35	143.4	20563.6	371.0	-1.8	-530.7	30105.0
21.01	12.7	68.54	134.6	18106.4	362.8	-48.5	-1116.5	28259.5
21.26	10.6	68.70	130.6	17059.0	363.3	28.8	925.0	27736.0
21.51	11.7	68.88	134.9	18189.9	361.6	24.0	2092.1	28365.6
21.76	11.2	69.05	124.2	15425.6	354.9	-97.8	-2386.0	25634.3
22.01	8.6	69.18	120.4	14493.8	337.0	22.0	829.2	25583.9
22.26	8.3	69.30	123.8	15324.0	353.6	46.3	2497.3	26985.6
22.51	9.4	69.44	125.1	15652.5	349.1	-35.8	-2178.7	26421.2
22.76	7.7	69.56	115.0	13222.7	332.6	-45.8	-1226.6	24440.4
23.01	6.4	69.65	111.4	12412.2	329.3	-11.3	-567.3	24002.7
23.26	6.2	69.75	112.8	12728.4	334.0	19.8	574.1	24256.0
23.51	7.4	69.86	116.1	13481.5	337.0	-11.3	-299.6	24557.1
23.76	7.6	69.97	115.1	13257.2	330.6	-34.3	-2201.2	23736.1
24.01	6.0	70.06	106.7	11376.4	318.7	-27.8	-825.1	22242.1
24.26	5.3	70.14	107.2	11496.1	325.3	8.5	219.6	22009.0

2000-01-01 00:00:00

TIME	HR	ENR	STAC	STAC	TEMP	TEMP	TEMP	TEMP
	ENR	ENR	TEMP	TEMP	TEMP	TEMP	TEMP	TEMP
	ENR	ENR	TEMP	TEMP	TEMP	TEMP	TEMP	TEMP
21.75	5.4	70.30	106.5	11333.7	321.9	4.6	-322.2	22292.2
25.01	4.2	70.36	98.1	9521.6	307.7	-36.8	-905.1	20700.0
25.26	4.9	70.44	100.5	10720.5	316.8	14.2	1303.0	21624.0
25.51	3.9	70.50	93.7	8775.9	300.7	62.0	-264.4	20418.0
25.76	4.2	70.56	99.8	9954.1	308.0	4.7	-146.3	20594.3
26.01	3.7	70.61	92.4	8534.1	293.0	37.6	-445.6	19334.9
26.26	3.0	70.67	95.6	9145.1	296.1	2.0	-103.0	19167.2
26.51	3.6	70.73	93.6	8751.6	291.9	1.0	-107.5	18547.5
26.76	3.9	70.79	93.9	8817.2	291.4	-17.6	-1025.4	18492.3
27.01	3.5	70.84	91.2	8315.6	286.6	-19.5	-902.1	17963.6
27.26	2.5	70.87	86.6	7504.8	282.3	-15.0	-0.3	17774.5
27.51	2.0	70.90	84.9	7208.0	279.6	-12.7	-560.4	17548.0
27.76	4.1	70.97	91.6	8394.2	281.7	14.9	1546.5	17276.3
28.01	2.6	71.01	83.5	6967.2	271.6	-27.2	78.3	16354.7
28.26	2.1	71.04	83.5	6970.6	272.9	-16.7	-968.6	16472.9
28.51	2.3	71.07	83.4	6955.6	270.1	-18.1	-1028.8	16136.1
28.76	2.6	71.11	85.9	7373.7	273.5	29.0	1375.3	16118.8
29.01	1.8	71.14	80.2	6455.2	266.7	-16.0	-235.4	15521.8
29.26	1.4	71.16	75.9	5756.3	257.9	-28.4	139.3	15195.3
29.51	0.7	71.17	74.3	5525.4	254.9	-5.4	-108.3	14963.4
29.76	0.4	71.18	75.6	5721.4	259.1	21.3	76.9	14687.5
30.01	0.8	71.19	74.0	5587.6	255.0	-5.1	-441.7	14172.5
30.26	1.0	71.20	74.0	5474.5	250.1	-13.1	-696.3	13653.8
30.51	1.3	71.22	75.0	5620.5	250.0	-6.8	-496.3	13516.5
30.76	2.3	71.26	77.8	6054.4	250.8	-17.1	-614.3	13601.5
31.01	2.5	71.30	73.8	5449.4	239.9	-61.1	-1109.6	12924.2
31.26	2.1	71.33	75.7	5727.5	242.7	-0.2	-324.6	12942.5
31.51	2.5	71.36	77.5	6009.4	245.9	21.6	1464.3	13162.1
31.76	2.5	71.40	69.7	4859.5	230.4	-61.8	693.4	12287.6
32.01	1.8	71.43	74.0	5470.1	238.0	14.6	138.3	12409.6
32.26	2.8	71.47	76.7	5879.8	239.3	-1.3	62.3	12472.8
32.51	3.1	71.52	76.0	5780.6	234.7	-23.0	-1075.0	12029.5
32.76	1.5	71.54	67.1	4499.7	222.7	-5.7	1159.3	11170.9
33.01	2.8	71.58	75.0	5519.0	234.3	1.8	739.4	11957.2
33.26	1.7	71.61	65.0	4228.9	219.4	-32.8	1679.1	11212.6
33.51	0.8	71.62	66.2	4387.7	222.8	2.4	-364.0	11215.9
33.76	0.6	71.63	67.0	4406.3	225.1	29.5	621.3	10976.4
34.01	0.8	71.64	65.9	4340.2	222.1	-5.3	-324.3	10665.2
34.26	0.5	71.65	61.1	3735.7	216.9	-41.0	435.0	10971.3
34.51	0.0	71.65	62.8	3918.0	219.7	31.1	396.3	10540.3
34.76	1.6	71.67	68.6	4707.3	224.2	7.0	861.5	10784.6
35.01	2.7	71.71	69.3	4799.7	216.2	-40.9	-1537.8	10108.0
35.26	2.8	71.75	68.9	4751.3	210.3	-5.8	-229.2	9684.4
35.51	2.7	71.79	64.3	4131.9	201.4	-55.5	-1367.6	9012.5
35.76	2.0	71.82	65.2	4248.4	205.9	-2.3	-100.6	9327.3
36.01	1.2	71.84	59.3	3515.3	199.0	-16.4	839.2	9217.5
36.26	0.7	71.85	63.0	3965.2	207.6	45.5	1227.5	9249.0

DATA FILE = NEOL50

TIME	PHI KG	ENERGY MJ	STACK TEMP	STACK TEMP SQUARED	TEMP WALLS & CEILING	TEMP RISE WALLS & CEILING	TEMP TIMES TEMP RISE WALLS & CEILING	TEMP SPD WALLS & CEILING
36.76	0.7	71.87	55.8	3109.2	190.7	-22.6	-52.5	0104.2
37.01	0.1	71.87	55.2	3051.5	193.8	-7.7	122.7	0059.3
37.26	1.9	71.90	63.0	3965.2	198.9	15.8	1261.7	8525.3
37.51	2.8	71.95	64.5	4159.0	195.3	-5.3	10.1	8407.2

APPENDIX D

GAS AND SMOKE DATA

NOTES ON DATA IN APPENDIX D

1. Load cell weights are pounds (not including weight of seat frame).
2. Seat No. 7 - A piece of asbestos-cement board from the radiant panel fell onto the seat at 2:00 minutes, increasing the weight by 1.6 pounds. This was removed at the end of the test (30 minutes) so that the final weight reflects the true weight loss of the seat. It is felt that the board did not significantly affect the outcome of the test.
3. Seat No. 8 - The smoke transmittance meter never returned to 100-percent transmittance. However, the minimum value of % T should still be correct.

NASA SEAT #1

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS1

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CELL % TRANS
0 30	7.9	0.013	0.005	81	0.0	91.8
1 0	7.9	0.265	0.015	94	0.2	88.9
1 30	7.7	0.055	0.008	16	0.0	58.3
2 0	7.0	0.171	0.011	0	0.1	26.9
2 30	6.5	1.818	0.096	81	1.7	18.1
3 0	6.0	0.264	0.022	80	0.2	16.8
3 30	5.7	2.661	0.176	387	3.3	25.2
4 0	5.5	0.337	0.029	51	0.4	40.3
4 30	5.2	2.319	0.103	262	2.9	40.1
5 0	4.8	0.400	0.030	70	0.5	48.0
5 30	4.5	2.434	0.079	58	3.2	55.7
6 0	4.3	0.313	0.027	4	0.6	56.0
6 30	4.0	2.493	0.080	60	3.7	59.5
7 0	4.0	0.312	0.030	26	0.5	59.3
7 30	3.9	1.886	0.079	178	2.6	65.2
8 0	3.7	0.278	0.030	53	0.5	71.7
8 30	3.7	1.572	0.079	101	2.1	78.0
9 0	3.6	0.295	0.029	30	0.5	78.8
9 30	3.6	1.070	0.059	180	1.4	78.7
10 0	3.5	0.237	0.025	110	0.5	83.4
10 30	3.5	0.953	0.065	161	1.1	81.6
11 0	3.4	0.172	0.028	85	0.4	80.8
11 30	3.4	0.495	0.047	150	0.8	76.3
12 0	3.4	0.141	0.022	0	0.4	81.1
12 30	3.4	0.366	0.045	37	0.7	80.4
13 0	3.3	0.112	0.028	0	0.3	83.6
13 30	3.4	0.264	0.043	80	0.5	87.8
14 0	3.3	0.094	0.032	86	0.3	88.6
14 30	3.3	0.219	0.042	129	0.4	89.5
15 0	3.3	0.124	0.032	0	0.2	83.8
15 30	3.3	0.179	0.041	112	0.3	88.3
16 0	3.3	0.089	0.030	106	0.2	91.6
16 30	3.3	0.123	0.036	128	0.3	87.1
17 0	3.3	0.102	0.031	95	0.2	92.3
17 30	3.3	0.143	0.037	96	0.2	89.5
18 0	3.3	0.109	0.030	78	0.1	90.1
18 30	3.3	0.112	0.035	113	0.1	92.7
19 0	3.3	0.094	0.031	5	0.1	97.3
19 30	3.3	0.083	0.033	103	0.1	94.8
20 0	3.3	0.082	0.030	0	0.1	92.8
20 30	3.3	0.064	0.029	23	0.1	97.5
21 0	3.3	0.074	0.028	85	0.1	93.5
21 30	3.2	0.056	0.031	3	0.0	93.2

NASA SEAT #1

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS1

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CELL % TRANS
22 0	3.3	0.078	0.031	83	0.0	96.0
22 30	3.3	0.055	0.032	76	0.0	94.1
23 0	3.3	0.078	0.031	74	0.0	97.5
23 30	3.2	0.048	0.033	37	0.0	96.4
24 0	3.3	0.071	0.034	94	0.0	94.4
24 30	3.3	0.059	0.034	73	0.0	92.8
25 0	3.3	0.076	0.033	0	0.0	92.3
25 30	3.3	0.057	0.032	0	0.0	97.0
26 0	3.2	0.085	0.030	1	0.0	95.9
26 30	3.3	0.049	0.031	0	0.0	98.4
27 0	3.3	0.093	0.034	84	0.0	98.5
27 30	3.3	0.048	0.030	87	0.0	91.9
28 0	3.3	0.083	0.031	0	0.0	89.9
28 30	3.3	0.036	0.028	97	0.0	94.4
29 0	3.3	0.070	0.030	0	0.0	95.7
29 30	3.3	0.031	0.029	0	0.0	94.1
30 0	3.3	0.067	0.031	92	0.0	94.7
30 30	3.3	0.032	0.028	95	0.0	97.1
31 0	3.2	0.071	0.029	50	0.0	100.0
31 30	3.3	0.025	0.027	5	0.0	100.0
32 0	3.3	0.066	0.030	44	0.0	100.0
32 30	3.3	0.031	0.026	68	0.0	100.0
33 0	3.3	0.085	0.032	0	0.0	100.0
33 30	3.3	0.040	0.029	95	0.0	97.7
34 0	3.3	0.106	0.032	8	0.0	100.0
34 30	3.3	0.038	0.029	0	0.0	100.0
35 0	3.3	0.099	0.029	4	0.0	100.0
35 30	3.3	0.054	0.029	0	0.0	98.5
36 0	3.3	0.108	0.030	30	0.0	100.0
36 30	3.3	0.091	0.028	0	0.0	100.0
37 0	3.3	0.149	0.029	0	0.0	94.6
37 30	3.3	0.082	0.025	77	0.0	96.5
38 0	3.3	0.159	0.030	0	0.0	92.9

NASA SEAT #2

TEST DATE: 11/21/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS2

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CELL % TRANS
0 30	10.6	0.000	0.003	0	0.0	98.5
1 0	10.6	0.179	0.012	32	0.0	97.0
1 30	10.5	0.005	0.007	93	0.0	83.0
2 0	10.1	0.044	0.010	0	0.0	48.6
2 30	9.8	0.707	0.037	60	0.7	32.6
3 0	9.5	0.060	0.014	5	0.0	27.9
3 30	9.1	1.683	0.069	69	2.0	31.7
4 0	8.9	0.100	0.016	0	0.1	35.4
4 30	8.6	2.055	0.075	157	2.2	36.2
5 0	7.9	0.163	0.019	101	0.2	41.0
5 30	7.6	2.352	0.069	165	2.7	43.6
6 0	7.8	0.194	0.019	0	0.3	45.2
6 30	7.7	1.764	0.069	171	2.2	61.2
7 0	7.6	0.187	0.017	0	0.4	63.8
7 30	7.6	1.331	0.080	203	2.0	72.7
8 0	7.4	0.155	0.021	0	0.4	75.4
8 30	7.4	1.155	0.082	88	1.6	77.3
9 0	7.4	0.123	0.022	92	0.3	78.0
9 30	7.4	0.691	0.066	67	1.0	83.4
10 0	7.4	0.123	0.022	86	0.3	84.6
10 30	7.3	0.477	0.053	116	0.6	81.4
11 0	7.3	0.100	0.022	0	0.3	87.1
11 30	7.3	0.304	0.044	140	0.5	88.3
12 0	7.3	0.076	0.023	16	0.2	89.8
12 30	7.3	0.187	0.036	68	0.4	89.8
13 0	7.3	0.060	0.020	95	0.2	91.3
13 30	7.2	0.163	0.036	49	0.3	86.2
14 0	7.2	0.052	0.024	0	0.1	87.6
14 30	7.2	0.147	0.037	124	0.2	89.8
15 0	7.2	0.044	0.023	53	0.1	88.5
15 30	7.2	0.116	0.037	128	0.2	94.7
16 0	7.1	0.060	0.027	23	0.1	91.7
16 30	7.2	0.131	0.039	58	0.1	91.0
17 0	7.2	0.076	0.025	78	0.1	91.1
17 30	7.1	0.108	0.037	77	0.1	91.2
18 0	7.1	0.068	0.026	5	0.0	91.1
18 30	7.1	0.084	0.035	146	0.1	97.1
19 0	7.1	0.044	0.028	28	0.0	91.7
19 30	7.1	0.052	0.035	144	0.0	95.5
20 0	7.1	0.013	0.028	3	0.0	95.9
20 30	7.1	0.021	0.035	38	0.0	96.1
21 0	7.1	0.005	0.029	29	0.0	93.5
21 30	7.1	0.005	0.034	113	0.0	95.3

NASA SEAT #2

TEST DATE: 11/21/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS2

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CELL % TRANS
22 0	7.1	0.005	0.028	104	0.0	98.9
22 30	7.1	0.028	0.032	124	0.0	100.8
23 0	7.1	0.044	0.031	0	0.0	94.7
23 30	7.1	0.052	0.033	90	0.0	98.2
24 0	7.1	0.044	0.031	102	0.0	98.4
24 30	7.1	0.044	0.034	112	0.0	96.3
25 0	7.0	0.044	0.029	0	0.0	94.9
25 30	7.1	0.021	0.033	126	0.0	100.0
26 0	7.0	0.013	0.029	0	0.0	98.1
26 30	7.0	0.013	0.035	5	0.0	100.8
27 0	7.0	0.000	0.029	0	0.0	100.0
27 30	7.0	0.000	0.032	0	0.0	98.8
28 0	7.0	0.000	0.031	11	0.0	98.1
28 30	7.0	0.000	0.035	76	0.0	94.5
29 0	7.0	0.000	0.029	58	0.0	97.4
29 30	7.0	0.000	0.037	14	0.0	100.0
30 0	7.0	0.000	0.029	55	0.0	99.6
30 30	7.0	0.000	0.035	89	0.0	100.9
31 0	7.0	0.000	0.030	0	0.0	103.9
31 30	7.0	0.000	0.035	100	0.0	104.9
32 0	7.0	0.000	0.030	42	0.0	97.2
32 30	7.0	0.000	0.034	0	0.0	101.4
33 0	7.0	0.000	0.029	95	0.0	105.5
33 30	7.0	0.000	0.033	102	0.0	104.4
34 0	7.0	0.000	0.029	55	0.0	100.0
34 30	7.0	0.000	0.032	0	0.0	100.0
35 0	7.0	0.000	0.031	0	0.0	102.2
35 30	7.0	0.000	0.031	19	0.0	96.3
36 0	7.0	0.000	0.029	39	0.0	97.1
36 30	7.0	0.000	0.029	98	0.0	100.5
37 0	7.0	0.000	0.031	58	0.0	98.4
37 30	7.0	0.000	0.030	0	0.0	101.1
38 0	7.0	0.000	0.033	0	0.0	99.3

NASA SEATS #4

TEST DATE: 11/25/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS4

TIME	LOAD	% CO2		% CO		ppm HCx		O2 DEPL, %		SMOKE CELL
min sec	CELL	CUBE	CHAMBER	CUBE	CHAMBER	CUBE	CHAMBER	CUBE	CHAMBER	% TRANS
0 30	14.6	0.001		0.004		37		0.0		100.0
1 0	14.6		0.051		0.008		73		0.0	100.0
1 30	14.4	0.000		0.006		0		0.0		94.9
2 0	14.3		0.024		0.007		0		0.0	73.0
2 30	14.1	0.273		0.023		117		0.2		45.3
3 0	13.9		0.205		0.021		30		0.2	28.0
3 30	13.6	0.589		0.047		75		0.7		13.2
4 0	12.8		0.553		0.045		65		0.6	14.6
4 30	12.3	1.245		0.146		445		1.8		11.8
5 0	12.0		1.108		0.123		443		1.3	10.3
5 30	11.6	1.353		0.189		762		1.7		11.4
6 0	11.2		1.265		0.164		573		1.6	12.6
6 30	10.7	1.503		0.211		809		2.0		19.1
7 0	10.6		1.252		0.163		598		1.7	26.4
7 30	10.4	1.011		0.148		585		1.5		31.6
8 0	10.4		1.173		0.168		625		1.6	34.4
8 30	10.3	0.740		0.120		481		1.3		41.5
9 0	10.3		0.842		0.129		493		1.3	43.3
9 30	10.2	0.598		0.110		535		0.9		48.9
10 0	10.2		0.754		0.127		555		1.1	51.5
10 30	10.1	0.487		0.103		397		0.7		41.9
11 0	10.1		0.527		0.098		427		0.8	49.1
11 30	10.0	0.435		0.107		499		0.6		49.2
12 0	10.0		0.434		0.084		442		0.6	55.3
12 30	10.0	0.335		0.071		419		0.4		51.4
13 0	9.9		0.398		0.075		447		0.5	57.5
13 30	9.9	0.370		0.081		478		0.4		60.0
14 0	9.8		0.356		0.078		351		0.4	51.6
14 30	9.8	0.280		0.071		330		0.3		58.0
15 0	9.8		0.283		0.070		315		0.3	66.6
15 30	9.8	0.245		0.067		333		0.3		66.9
16 0	9.7		0.241		0.060		357		0.3	72.1
16 30	9.7	0.201		0.055		266		0.2		68.0
17 0	9.7		0.255		0.063		303		0.3	71.7
17 30	9.7	0.190		0.049		218		0.2		74.4
18 0	9.8		0.216		0.049		293		0.2	76.4
18 30	9.7	0.245		0.062		224		0.2		77.3
19 0	9.7		0.220		0.047		266		0.1	81.5
19 30	9.7	0.208		0.052		195		0.1		82.9
20 0	9.7		0.252		0.055		207		0.1	83.7
20 30	9.7	0.263		0.045		171		0.0		86.4
21 0	9.7		0.278		0.046		132		0.1	87.9
21 30	9.8	0.253		0.060		229		0.1		82.2

NASA SEATS #4

TEST DATE: 11/25/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS4

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CELL % TRANS
22 0	9.7	0.201	0.044	216	0.0	91.4
22 30	9.8	0.200	0.042	158	0.0	88.4
23 0	9.8	0.255	0.052	228	0.0	94.5
23 30	9.8	0.209	0.053	166	0.0	93.2
24 0	9.7	0.189	0.048	84	0.0	96.2
24 30	9.8	0.184	0.059	88	0.0	93.9
25 0	9.8	0.168	0.047	202	0.0	98.2
25 30	9.8	0.129	0.047	48	0.0	98.5
26 0	9.8	0.175	0.048	125	0.0	91.4
26 30	9.8	0.160	0.050	155	0.0	94.0
27 0	9.8	0.164	0.048	142	0.0	98.0
27 30	9.8	0.138	0.050	66	0.0	97.1
28 0	9.8	0.143	0.048	136	0.0	95.0
28 30	9.8	0.146	0.056	76	0.0	99.6
29 0	9.8	0.143	0.046	35	0.0	100.0
29 30	9.8	0.121	0.044	145	0.0	100.0
30 0	9.8	0.146	0.045	24	0.0	100.0
30 30	9.9	0.175	0.046	67	0.0	100.0
31 0	9.8	0.183	0.047	30	0.0	100.0
31 30	9.8	0.129	0.043	24	0.0	100.0
32 0	9.9	0.136	0.043	77	0.0	100.0
32 30	9.9	0.126	0.042	137	0.0	100.0
33 0	9.8	0.115	0.039	14	0.0	100.0
33 30	9.9	0.095	0.032	124	0.0	100.0
34 0	9.8	0.123	0.040	19	0.0	100.0
34 30	9.9	0.098	0.037	45	0.0	100.0
35 0	9.8	0.123	0.039	19	0.0	100.0
35 30	9.8	0.111	0.030	120	0.0	100.0
36 0	9.8	0.142	0.038	131	0.0	100.0
36 30	9.8	0.132	0.034	20	0.0	100.0
37 0	9.8	0.134	0.036	37	0.0	100.0
37 30	9.8	0.113	0.026	76	0.0	100.0
38 0	9.8	0.131	0.037	10	0.0	100.0
38 30	9.8	0.096	0.028	48	0.0	100.0
39 0	9.8	0.115	0.030	130	0.0	100.0
39 30	9.8	0.070	0.021	17	0.0	100.0

NASA SEATS #5

TEST DATE: 11/20/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATSS

TIME	LOAD	% CO2		% CO		ppm HCx		O2 DEPL, %		SMOKE CELL
min sec	CELL	CUBE	CHAMBER	CUBE	CHAMBER	CUBE	CHAMBER	CUBE	CHAMBER	% TRANS
0 30	15.2	0.000		0.000		0		0.0		93.4
1 0	15.3		0.187		0.000		13		0.2	99.3
1 30	15.1	0.000		0.000		8		0.0		77.1
2 0	15.0		0.068		0.000		22		0.1	47.6
2 30	14.7	0.312		0.012		0		0.4		23.5
3 0	14.5		0.076		0.000		0		0.0	20.6
3 30	14.3	0.756		0.052		87		1.0		17.8
4 0	14.0		0.100		0.008		0		0.1	10.3
4 30	13.6	1.441		0.133		252		1.7		6.8
5 0	13.2		0.131		0.020		3		0.2	5.1
5 30	12.7	2.010		0.220		464		2.4		5.3
6 0	12.1		0.147		0.032		104		0.3	8.0
6 30	11.8	2.044		0.206		434		2.6		14.2
7 0	11.7		0.147		0.035		142		0.3	19.9
7 30	11.6	1.181		0.129		276		1.8		26.0
8 0	11.5		0.131		0.035		87		0.3	36.8
8 30	11.4	0.902		0.114		256		1.4		39.0
9 0	11.4		0.108		0.038		135		0.3	48.1
9 30	11.3	0.756		0.102		249		1.1		52.8
10 0	11.3		0.092		0.031		44		0.3	58.9
10 30	11.3	0.525		0.096		369		0.9		54.6
11 0	11.2		0.060		0.032		91		0.3	62.8
11 30	11.2	0.391		0.094		428		0.7		60.2
12 0	11.2		0.052		0.032		95		0.2	61.6
12 30	11.1	0.289		0.091		414		0.6		61.3
13 0	11.1		0.013		0.032		124		0.2	63.0
13 30	11.1	0.242		0.084		338		0.5		66.3
14 0	11.1		0.013		0.033		97		0.2	69.8
14 30	11.0	0.210		0.091		278		0.4		67.6
15 0	11.0		0.000		0.034		35		0.2	67.1
15 30	11.0	0.147		0.095		384		0.4		65.9
16 0	10.9		0.000		0.036		24		0.1	68.2
16 30	10.9	0.155		0.101		367		0.3		66.2
17 0	10.9		0.000		0.036		136		0.1	70.2
17 30	10.8	0.218		0.109		239		0.3		67.5
18 0	10.8		0.013		0.037		77		0.1	69.7
18 30	10.7	0.163		0.104		239		0.3		65.5
19 0	10.7		0.000		0.039		132		0.0	72.1
19 30	10.7	0.163		0.105		327		0.3		72.3
20 0	10.7		0.000		0.037		144		0.0	70.7
20 30	10.6	0.123		0.093		196		0.2		67.9
21 0	10.6		0.000		0.039		29		0.0	72.0
21 30	10.6	0.147		0.101		165		0.2		72.2

NASA SEATS #5

TEST DATE: 11/20/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATSS

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CELL % TRANS
22 0	10.6	0.052	0.042	22	0.0	70.2
22 30	10.6	0.171	0.094	285	0.2	77.6
23 0	10.6	0.013	0.040	94	0.0	77.6
23 30	10.5	0.155	0.102	119	0.1	75.7
24 0	10.5	0.000	0.042	84	0.0	83.0
24 30	10.5	0.092	0.098	194	0.1	82.6
25 0	10.4	0.000	0.039	10	0.0	78.9
25 30	10.5	0.076	0.092	181	0.2	80.0
26 0	10.5	0.000	0.043	121	0.0	81.3
26 30	10.4	0.108	0.096	112	0.1	84.8
27 0	10.4	0.000	0.042	90	0.0	86.1
27 30	10.4	0.108	0.103	89	0.1	85.3
28 0	10.4	0.000	0.043	7	0.0	81.4
28 30	10.4	0.092	0.086	140	0.1	83.4
29 0	10.4	0.000	0.043	105	0.0	82.2
29 30	10.4	0.116	0.093	70	0.1	86.0
30 0	10.4	0.000	0.044	64	0.0	88.2
30 30	10.3	0.116	0.101	35	0.1	85.3
31 0	10.4	0.000	0.044	114	0.0	84.6
31 30	10.4	0.108	0.093	99	0.1	89.1
32 0	10.3	0.000	0.043	0	0.0	87.8
32 30	10.4	0.131	0.100	135	0.1	88.9
33 0	10.3	0.000	0.045	7	0.0	92.3
33 30	10.3	0.242	0.102	144	0.1	88.2
34 0	10.3	0.092	0.042	34	0.0	92.7
34 30	10.3	0.179	0.095	52	0.1	90.9
35 0	10.3	0.005	0.044	16	0.0	93.1
35 30	10.4	0.123	0.094	123	0.1	94.2
36 0	10.3	0.000	0.042	0	0.0	94.3
36 30	10.4	0.060	0.097	130	0.1	95.9
37 0	10.4	0.000	0.041	0	0.0	92.9
37 30	10.4	0.100	0.090	119	0.1	96.6
38 0	10.4	0.000	0.041	64	0.0	96.9
38 30	10.4	0.076	0.086	102	0.1	97.8
39 0	10.3	0.000	0.043	0	0.0	94.4
39 30	10.4	0.052	0.087	119	0.1	94.6
40 0	10.4	0.000	0.042	100	0.0	96.7
40 30	10.3	0.076	0.080	0	0.0	93.6
41 0	10.4	0.000	0.041	84	0.0	94.6
41 30	10.4	0.052	0.077	73	0.0	97.8
42 0	10.4	0.000	0.041	27	0.0	97.9
42 30	10.3	0.060	0.076	11	0.0	94.7
43 0	10.3	0.000	0.042	0	0.0	96.0

NASA SEATS #5

TEST DATE: 11/20/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATSS

TIME	LOAD	% CO2	% CO	ppm HCx	O2 DEPL, %	SMOKE CELL
min sec	CELL	CUBE CHAMBER	CUBE CHAMBER	CUBE CHAMBER	CUBE CHAMBER	% TRANS
43 30	10.4	0.076	0.075	106	0.0	97.7
44 0	10.4	0.005	0.042	71	0.0	97.0
44 30	10.3	0.052	0.075	0	0.0	96.3
45 0	10.4	0.000	0.039	93	0.0	98.7
45 30	10.3	0.013	0.073	21	0.0	99.3
46 0	10.3	0.000	0.040	41	0.0	100.0
46 30	10.3	0.068	0.073	63	0.0	97.1
47 0	10.3	0.000	0.038	49	0.0	101.2
47 30	10.3	0.013	0.068	87	0.0	97.2
48 0	10.3	0.000	0.037	47	0.0	107.9
48 30	10.3	0.100	0.065	0	0.0	106.1
49 0	10.3	0.084	0.036	0	0.0	100.1
49 30	10.3	0.116	0.067	82	0.0	100.0
50 0	10.3	0.000	0.038	0	0.0	102.4
50 30	10.3	0.005	0.065	104	0.0	102.9
51 0	10.3	0.000	0.039	91	0.0	105.5
51 30	10.3	0.000	0.061	36	0.0	105.8
52 0	10.2	0.000	0.039	0	0.0	104.4
52 30	10.2	0.000	0.061	76	0.0	100.0
53 0	10.2	0.000	0.041	0	0.0	97.6
53 30	10.2	0.000	0.062	18	0.0	103.2
54 0	10.2	0.000	0.039	36	0.0	104.5
54 30	10.2	0.000	0.058	74	0.0	105.5
55 0	10.2	0.000	0.042	47	0.0	103.5
55 30	10.2	0.000	0.059	67	0.0	106.5
56 0	10.2	0.000	0.041	31	0.0	105.4
56 30	10.2	0.000	0.056	83	0.0	100.0

NASA SEAT #6

TEST DATE: 11/21/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATSG

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CELL % TRANS
0 30	8.7	0.000	0.000	0	0.0	96.2
1 0	8.7	0.257	0.004	0	0.2	108.1
1 30	8.6	0.005	0.000	61	0.0	72.8
2 0	8.4	0.131	0.000	92	0.1	54.2
2 30	8.1	0.344	0.020	0	0.4	29.4
3 0	7.9	0.187	0.004	96	0.2	18.9
3 30	7.6	0.952	0.065	102	1.3	20.1
4 0	7.3	0.257	0.011	67	0.2	25.4
4 30	6.5	1.172	0.079	231	1.4	26.0
5 0	6.1	0.234	0.013	48	0.3	37.0
5 30	6.0	1.216	0.075	82	1.6	48.6
6 0	5.9	0.242	0.016	99	0.3	58.6
6 30	6.6	1.172	0.058	175	1.4	72.0
7 0	6.5	0.218	0.015	108	0.4	68.4
7 30	6.5	0.886	0.097	60	1.2	74.3
8 0	6.4	0.194	0.018	0	0.3	80.0
8 30	6.4	0.675	0.114	168	1.0	81.0
9 0	6.3	0.155	0.021	116	0.3	84.6
9 30	6.3	0.683	0.112	86	0.9	84.0
10 0	6.2	0.155	0.023	15	0.3	92.1
10 30	6.3	0.596	0.108	98	0.7	93.2
11 0	6.3	0.139	0.024	106	0.2	94.1
11 30	6.3	0.438	0.102	24	0.6	92.7
12 0	6.3	0.108	0.024	27	0.2	97.1
12 30	6.3	0.359	0.055	20	0.5	94.5
13 0	6.2	0.116	0.023	0	0.2	100.0
13 30	6.3	0.187	0.071	101	0.3	100.0
14 0	6.3	0.123	0.022	85	0.1	104.5
14 30	6.2	0.171	0.057	0	0.2	100.6
15 0	6.2	0.092	0.024	0	0.1	104.7
15 30	6.2	0.131	0.048	0	0.2	104.9
16 0	6.2	0.068	0.021	98	0.1	104.6
16 30	6.2	0.116	0.038	4	0.1	101.1
17 0	6.2	0.060	0.020	56	0.1	100.2
17 30	6.3	0.068	0.038	79	0.1	109.3
18 0	6.2	0.060	0.020	92	0.0	105.9
18 30	6.2	0.044	0.022	0	0.0	104.1
19 0	6.2	0.060	0.019	31	0.0	103.3
19 30	6.2	0.052	0.026	0	0.0	105.7
20 0	6.2	0.052	0.020	95	0.0	105.3
20 30	6.2	0.044	0.028	0	0.0	106.6
21 0	6.2	0.052	0.021	0	0.0	103.7
21 30	6.2	0.060	0.024	85	0.0	108.7

NASA SEAT #6

TEST DATE: 11/21/80

PROJECT NUMBER: 01-5584-001

FILE: NSEAT56

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CEL % TRANS
22 0	6.2	0.060	0.021	18	0.0	104.6
22 30	6.2	0.044	0.021	84	0.0	107.3
23 0	6.2	0.060	0.020	0	0.0	103.4
23 30	6.2	0.036	0.022	11	0.0	106.6
24 0	6.3	0.060	0.020	88	0.0	110.4
24 30	6.2	0.044	0.022	0	0.0	104.9
25 0	6.2	0.068	0.023	0	0.0	106.8
25 30	6.3	0.044	0.021	94	0.0	107.4
26 0	6.2	0.068	0.022	0	0.0	101.8
26 30	6.2	0.052	0.024	0	0.0	103.7
27 0	6.2	0.084	0.022	0	0.0	105.0
27 30	6.2	0.060	0.020	54	0.0	100.3
28 0	6.2	0.084	0.022	0	0.0	99.2
28 30	6.2	0.052	0.021	0	0.0	101.1
29 0	6.3	0.084	0.023	48	0.0	100.0
29 30	6.3	0.052	0.021	76	0.0	106.6
30 0	6.2	0.076	0.022	0	0.0	104.4
30 30	6.3	0.060	0.022	94	0.0	107.1
31 0	6.2	0.084	0.020	0	0.0	101.8
31 30	6.2	0.044	0.019	13	0.0	102.1
32 0	6.3	0.060	0.019	22	0.0	103.0
32 30	6.3	0.036	0.019	89	0.0	108.7
33 0	6.2	0.044	0.022	0	0.0	107.9
33 30	6.3	0.036	0.021	90	0.0	108.1
34 0	6.3	0.060	0.020	16	0.0	102.4

NASA SEATS #7

TEST DATE: 11/19/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS7

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CELL % TRANS
0 30	5.4	0.000	0.000	104	0.0	97.6
1 0	5.4	0.257	0.005	0	0.3	98.4
1 30	5.3	0.005	0.000	103	0.0	97.7
2 0	6.5	0.155	0.000	82	0.2	83.1
2 30	6.2	0.628	0.009	46	0.7	80.0
3 0	5.9	0.265	0.007	50	0.2	80.2
3 30	5.5	1.137	0.023	73	1.3	84.3
4 0	5.4	0.352	0.016	59	0.5	84.8
4 30	5.3	1.094	0.033	24	1.4	85.6
5 0	5.3	0.344	0.022	29	0.6	89.3
5 30	5.2	0.993	0.045	112	1.4	94.0
6 0	5.2	0.297	0.032	0	0.6	91.5
6 30	5.2	0.993	0.060	68	1.4	93.6
7 0	5.2	0.249	0.036	98	0.6	95.1
7 30	5.2	0.620	0.078	25	1.1	93.4
8 0	5.2	0.202	0.043	9	0.5	90.6
8 30	5.1	0.438	0.074	108	0.7	97.8
9 0	5.1	0.155	0.043	9	0.2	95.0
9 30	5.2	0.289	0.062	123	0.4	96.9
10 0	5.1	0.108	0.041	41	0.2	98.3
10 30	5.1	0.218	0.053	8	0.3	97.7
11 0	5.2	0.092	0.038	51	0.1	100.0
11 30	5.1	0.131	0.046	0	0.2	97.8
12 0	5.2	0.068	0.037	69	0.1	100.0
12 30	5.2	0.100	0.041	80	0.1	98.1
13 0	5.2	0.076	0.037	14	0.0	102.7
13 30	5.1	0.060	0.038	0	0.0	103.5
14 0	5.1	0.052	0.035	0	0.0	99.7
14 30	5.2	0.044	0.034	6	0.0	100.2
15 0	5.2	0.044	0.038	105	0.0	99.7
15 30	5.1	0.021	0.036	0	0.0	95.2
16 0	5.1	0.052	0.033	0	0.0	95.5
16 30	5.2	0.013	0.030	101	0.0	100.0
17 0	5.1	0.044	0.034	0	0.0	99.1
17 30	5.2	0.005	0.030	0	0.0	105.3
18 0	5.2	0.044	0.030	15	0.0	104.0
18 30	5.1	0.013	0.030	9	0.0	100.0
19 0	5.1	0.052	0.031	0	0.0	99.5
19 30	5.1	0.005	0.031	0	0.0	101.3
20 0	5.2	0.036	0.033	22	0.0	100.0
20 30	5.2	0.005	0.032	100	0.0	101.1
21 0	5.2	0.028	0.034	81	0.0	95.8
21 30	5.1	0.000	0.030	0	0.0	97.0

NASA SEATS #7

TEST DATE: 11/19/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS7

TIME	LOAD	% CO2		% CO		ppm HCx		O2 DEPL, %		SMOKE CEL
min sec	CELL	CUBE	CHAMBER	CUBE	CHAMBER	CUBE	CHAMBER	CUBE	CHAMBER	% TRANS
22 0	5.1		0.013		0.033		0		0.0	95.6
22 30	5.1	0.000		0.027		0		0.0		97.9
23 0	5.2		0.028		0.027		99		0.0	99.3
23 30	5.1	0.000		0.023		40		0.0		101.1
24 0	5.2		0.021		0.023		79		0.0	104.9
24 30	5.1	0.005		0.020		60		0.0		104.2
25 0	5.2		0.036		0.023		0		0.0	99.4
25 30	5.2	0.005		0.020		26		0.0		97.0
26 0	5.2		0.052		0.021		79		0.0	93.6
26 30	5.2	0.005		0.018		20		0.0		97.9
27 0	5.2		0.028		0.018		48		0.0	95.1
27 30	5.2	0.000		0.014		69		0.0		95.5
28 0	5.2		0.028		0.015		0		0.0	100.8
28 30	5.1	0.000		0.012		0		0.0		98.7
29 0	5.2		0.021		0.013		0		0.0	98.5
29 30	5.1	0.000		0.010		0		0.0		93.3
30 0	5.2		0.021		0.008		28		0.0	97.8
30 30	3.6	0.000		0.004		0		0.0		101.0
31 0	3.6		0.036		0.005		18		0.0	100.0
31 30	3.6	0.028		0.000		90		0.0		101.4
32 0	3.6		0.000		0.000		12		0.0	96.0
32 30	3.6	0.000		0.000		2		0.0		95.2
33 0	3.6		0.000		0.000		0		0.0	99.0
33 30	3.6	0.000		0.000		77		0.0		95.0
34 0	3.6		0.000		0.000		5		0.0	97.3

NASA SEAT #8

TEST DATE: 11/25/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS8

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CELL % TRANS
0 30	6.5	0.000	0.000	11	0.0	100.0
1 0	6.5	0.085	0.000	59	0.0	100.0
1 30	6.3	0.107	0.002	0	0.0	21.4
2 0	6.0	0.046	0.000	41	0.0	16.7
2 30	5.7	1.190	0.024	18	1.5	18.1
3 0	5.5	0.295	0.007	64	0.3	18.4
3 30	5.1	0.760	0.025	42	1.0	15.2
4 0	4.7	0.558	0.020	46	0.7	13.4
4 30	4.6	0.821	0.059	97	1.2	13.9
5 0	4.7	0.819	0.047	128	1.1	13.1
5 30	4.9	0.969	0.065	110	1.2	8.4
6 0	4.6	0.830	0.060	198	1.0	6.3
6 30	4.3	1.052	0.088	326	1.4	6.9
7 0	4.3	0.935	0.085	296	1.5	7.7
7 30	4.2	0.822	0.111	244	1.3	9.7
8 0	4.2	0.812	0.096	335	1.3	9.7
8 30	4.1	0.638	0.105	308	1.0	11.6
9 0	4.1	0.629	0.086	329	1.0	13.9
9 30	4.1	0.358	0.066	314	0.6	14.3
10 0	4.0	0.554	0.086	234	0.9	15.7
10 30	4.0	0.248	0.044	152	0.5	17.6
11 0	4.0	0.383	0.058	167	0.6	17.3
11 30	4.0	0.200	0.031	108	0.4	18.4
12 0	4.0	0.331	0.049	255	0.6	19.0
12 30	4.0	0.178	0.033	203	0.3	17.9
13 0	3.9	0.203	0.034	92	0.4	18.0
13 30	3.9	0.129	0.018	136	0.3	17.0
14 0	3.9	0.175	0.030	85	0.3	18.2
14 30	3.8	0.105	0.026	102	0.2	17.7
15 0	3.8	0.119	0.021	189	0.3	17.4
15 30	3.8	0.101	0.028	231	0.2	15.7
16 0	3.7	0.139	0.032	114	0.2	16.3
16 30	3.6	0.146	0.032	132	0.2	16.6
17 0	3.6	0.174	0.030	120	0.2	15.9
17 30	3.6	0.293	0.052	276	0.3	17.8
18 0	3.5	0.211	0.035	178	0.3	17.8
18 30	3.5	0.234	0.039	156	0.3	18.1
19 0	3.4	0.307	0.050	147	0.4	18.2
19 30	3.4	0.253	0.040	120	0.3	18.9
20 0	3.4	0.290	0.047	112	0.4	20.3
20 30	3.4	0.205	0.042	74	0.3	20.5
21 0	3.3	0.278	0.050	86	0.4	21.0
21 30	3.3	0.175	0.043	33	0.2	22.1

NASA SEAT #8

TEST DATE: 11/25/80

PROJECT NUMBER: 01-5584-001

FILE: NSEAT88

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CELL % TRANS
22 0	3.4	0.211	0.044	73	0.3	22.0
22 30	3.4	0.137	0.039	40	0.2	22.3
23 0	3.4	0.164	0.038	102	0.2	21.9
23 30	3.4	0.072	0.019	108	0.1	22.8
24 0	3.4	0.159	0.035	92	0.2	22.7
24 30	3.4	0.081	0.015	24	0.0	22.8
25 0	3.3	0.138	0.022	46	0.1	22.1
25 30	3.4	0.085	0.005	8	0.0	22.8
26 0	3.4	0.147	0.015	81	0.1	22.6
26 30	3.4	0.065	0.003	0	0.0	23.6
27 0	3.4	0.116	0.009	25	0.0	22.5
27 30	3.3	0.101	0.000	19	0.0	22.5
28 0	3.4	0.106	0.004	71	0.0	22.5
28 30	3.3	0.030	0.000	19	0.0	22.7
29 0	3.4	0.050	0.002	104	0.0	24.1
29 30	3.3	0.069	0.000	56	0.0	23.1
30 0	3.4	0.114	0.001	81	0.0	23.7
30 30	3.4	0.055	0.000	47	0.0	23.5
31 0	3.4	0.053	0.000	0	0.0	26.4
31 30	3.4	0.000	0.000	0	0.0	26.1
32 0	3.4	0.000	0.000	89	0.0	24.7
32 30	3.3	0.000	0.000	92	0.0	26.1
33 0	3.3	0.000	0.000	97	0.0	26.0
33 30	3.3	0.000	0.000	2	0.0	26.2
34 0	3.3	0.000	0.000	20	0.0	25.4

NASA SEAT #9

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS9

TIME min sec	LOAD CELL	% CO2 CUBE CHAMBER	% CO CUBE CHAMBER	ppm HCx CUBE CHAMBER	O2 DEPL, % CUBE CHAMBER	SMOKE CELL % TRANS
0 30	12.8	0.043	0.002	0	0.0	99.5
1 0	12.8	0.243	0.011	34	0.1	100.0
1 30	12.7	0.041	0.002	6	0.0	36.5
2 0	12.0	0.153	0.008	0	0.0	4.4
2 30	11.1	3.191	0.427	1165	3.4	3.4
3 0	10.4	0.271	0.030	160	0.2	0.6
3 30	9.5	3.483	0.557	2437	4.8	1.4
4 0	9.1	0.323	0.045	235	0.4	0.7
4 30	8.6	3.021	0.455	1647	4.0	2.0
5 0	8.2	0.394	0.047	262	0.5	2.9
5 30	7.8	2.688	0.372	1290	3.6	4.8
6 0	7.4	0.333	0.044	164	0.5	4.2
6 30	7.2	2.415	0.401	1799	3.3	7.2
7 0	6.8	0.276	0.040	234	0.5	8.0
7 30	6.5	2.389	0.392	1801	3.4	14.1
8 0	6.3	0.247	0.041	317	0.5	14.2
8 30	6.0	2.494	0.360	1611	3.4	19.2
9 0	5.8	0.256	0.039	222	0.5	14.7
9 30	5.6	2.316	0.419	1810	3.0	15.0
10 0	5.4	0.227	0.036	359	0.5	20.9
10 30	5.2	1.800	0.294	1351	2.5	21.5
11 0	5.1	0.197	0.030	340	0.5	23.0
11 30	5.0	1.378	0.220	791	1.9	21.0
12 0	4.9	0.172	0.028	277	0.5	27.7
12 30	4.8	1.270	0.202	781	1.8	32.6
13 0	4.7	0.197	0.029	167	0.5	34.6
13 30	4.7	1.022	0.159	628	1.5	37.7
14 0	4.6	0.158	0.021	204	0.4	37.4
14 30	4.5	0.885	0.123	556	1.4	34.3
15 0	4.4	0.162	0.021	125	0.4	37.7
15 30	4.3	0.774	0.114	446	1.2	39.9
16 0	4.3	0.162	0.019	159	0.4	40.4
16 30	4.2	0.749	0.110	366	1.1	42.0
17 0	4.1	0.172	0.020	136	0.3	35.6
17 30	4.0	0.767	0.113	429	1.1	42.3
18 0	3.9	0.168	0.018	161	0.3	31.7
18 30	3.8	0.720	0.115	326	1.1	41.9
19 0	3.8	0.154	0.021	182	0.3	38.0
19 30	3.7	0.551	0.091	298	0.8	38.7
20 0	3.7	0.147	0.021	144	0.2	52.7
20 30	3.7	0.523	0.088	307	0.7	54.5
21 0	3.6	0.137	0.021	60	0.2	45.5
21 30	3.6	0.473	0.087	517	0.7	57.8

NASA SEAT #9

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS9

TIME min sec	LOAD CELL	% CO ₂		% CO		ppm HCx		O ₂ DEPL, %		SMOKE CELL % TRANS
		CUBE	CHAMBER	CUBE	CHAMBER	CUBE	CHAMBER	CUBE	CHAMBER	
22 0	3.6		0.142		0.021		81		0.2	58.9
22 30	3.5	0.419		0.066		334		0.5		64.9
23 0	3.6		0.185		0.020		87		0.2	62.8
23 30	3.5	0.348		0.071		506		0.4		63.9
24 0	3.5		0.157		0.022		183		0.1	66.1
24 30	3.5	0.278		0.066		593		0.4		62.2
25 0	3.5		0.121		0.021		104		0.1	62.1
25 30	3.4	0.303		0.080		690		0.3		39.4
26 0	3.4		0.080		0.021		233		0.1	32.1
26 30	3.3	0.410		0.143		1356		0.5		16.8
27 0	3.2		0.153		0.018		195		0.1	15.1
27 30	3.1	0.526		0.116		790		0.6		20.1
28 0	3.1		0.143		0.020		130		0.1	17.6
28 30	3.0	0.497		0.110		775		0.6		29.3
29 0	3.0		0.101		0.022		234		0.1	30.4
29 30	2.9	0.493		0.108		514		0.6		32.7
30 0	2.9		0.092		0.022		136		0.1	39.3
30 30	2.9	0.434		0.088		384		0.6		44.3
31 0	2.8		0.079		0.023		200		0.1	43.2
31 30	2.8	0.388		0.079		296		0.5		53.0
32 0	2.8		0.113		0.019		87		0.1	60.1
32 30	2.8	0.350		0.063		326		0.4		74.0
33 0	2.8		0.124		0.018		138		0.1	68.9
33 30	2.8	0.237		0.049		311		0.2		79.2
34 0	2.8		0.133		0.018		163		0.1	75.2
34 30	2.8	0.216		0.044		228		0.2		65.4
35 0	2.7		0.104		0.014		149		0.0	76.2
35 30	2.7	0.185		0.037		234		0.2		81.9
36 0	2.7		0.064		0.013		146		0.0	78.5
36 30	2.7	0.193		0.044		309		0.2		83.7
37 0	2.7		0.066		0.012		25		0.0	83.5
37 30	2.7	0.262		0.040		194		0.2		88.0
38 0	2.7		0.053		0.010		132		0.0	79.6
38 30	2.6	0.256		0.039		106		0.3		82.9
39 0	2.6		0.036		0.008		33		0.0	81.3
39 30	2.6	0.224		0.034		202		0.2		87.2
40 0	2.6		0.044		0.008		53		0.0	88.4
40 30	2.6	0.115		0.019		104		0.1		88.6
41 0	2.6		0.085		0.006		118		0.0	84.6
41 30	2.6	0.121		0.015		64		0.1		89.8
42 0	2.6		0.067		0.007		84		0.0	99.8
42 30	2.6	0.139		0.010		26		0.0		98.2
43 0	2.6		0.088		0.005		0		0.0	94.6

NASA SEAT #9

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS9

TIME	LOAD	% CO2		% CO		ppm HCx		O2 DEPL, %		SMOKE CELL
min sec	CELL	CUBE	CHAMBER	CUBE	CHAMBER	CUBE	CHAMBER	CUBE	CHAMBER	% TRANS
43 30	2.6	0.095		0.008		126		0.0		98.0
44 0	2.6		0.124		0.005		0		0.0	95.9
44 30	2.6	0.149		0.007		3		0.0		99.5
45 0	2.6		0.089		0.005		101		0.0	94.5
45 30	2.6	0.059		0.004		117		0.0		96.0
46 0	2.6		0.021		0.004		87		0.0	100.0
46 30	2.6	0.005		0.004		116		0.0		98.4
47 0	2.6		0.004		0.002		62		0.0	99.4
47 30	2.6	0.005		0.002		0		0.0		98.4
48 0	2.6		0.000		0.002		106		0.0	96.8
48 30	2.6	0.012		0.000		110		0.0		97.3
49 0	2.6		0.005		0.000		2		0.0	100.0
49 30	2.6	0.047		0.001		57		0.0		100.0
50 0	2.6		0.047		0.000		67		0.0	100.0
50 30	2.6	0.034		0.000		23		0.0		100.0
51 0	2.6		0.073		0.001		18		0.0	100.0
51 30	2.6	0.077		0.002		0		0.0		96.8
52 0	2.6		0.070		0.002		6		0.0	100.0
52 30	2.6	0.064		0.000		0		0.0		100.0
53 0	2.6		0.035		0.000		0		0.0	100.0
53 30	2.6	0.031		0.000		60		0.0		100.0

NASA BASELINE SEAT TEST #1 - 10W

TIME MIN SEC	LOAD CELL	CO2 %	CO %	NOX PPM	CHX PPM	O2 % DEP	SMOKE CELL % TRANS
0 5	92.39	0.000	0.012	0	4	0.00	99.92
0 34	92.31	0.000	0.012	3	49	0.00	52.91
1 4	91.86	0.585	0.178	38	247	0.73	8.03
1 33	91.36	2.162	0.351	128	1071	2.98	6.99
2 3	90.96	2.679	0.458	147	1685	3.77	5.78
2 33	90.55	3.069	0.554	156	2456	4.15	3.72
3 2	90.09	3.303	0.610	160	2665	4.50	1.83
3 32	89.69	3.487	0.636	163	2810	4.82	0.73
4 1	89.26	3.578	0.657	168	3086	5.05	1.22
4 31	88.88	3.600	0.668	169	3425	5.14	1.11
5 0	88.50	3.478	0.635	165	3458	4.97	1.51
5 30	88.20	3.503	0.615	165	3505	5.08	1.69
6 0	87.89	3.354	0.555	162	3161	4.59	2.69
6 29	87.64	3.194	0.507	161	2672	4.34	3.88
6 59	87.42	3.087	0.467	166	2423	4.30	5.70
7 28	87.22	2.976	0.431	167	2110	4.09	9.00
7 58	87.01	2.815	0.396	173	1979	3.89	8.82
8 27	86.87	2.596	0.363	171	1808	3.54	10.74
8 57	86.66	2.312	0.329	162	1613	3.22	9.72
9 26	86.51	2.025	0.298	149	1510	2.87	11.45
9 56	86.46	1.823	0.273	138	1489	2.58	13.62
10 25	86.32	1.634	0.253	129	1417	2.37	15.26
10 35	86.29	1.579	0.247	127	1394	2.31	17.75
10 55	86.29	1.509	0.231	124	1321	2.19	18.48
11 5	86.26	1.499	0.226	123	1289	2.17	19.61
11 25	86.21	1.438	0.216	120	1240	2.11	21.67
11 34	86.14	1.366	0.209	118	1173	2.07	24.08
12 4	86.10	1.216	0.188	109	1075	1.85	27.40
12 33	86.10	1.040	0.168	98	1055	1.68	31.31
13 3	85.83	0.892	0.153	92	940	1.59	31.92
13 32	85.87	0.759	0.137	86	830	1.39	36.62
14 2	85.84	0.682	0.126	78	747	1.34	41.23
14 31	85.74	0.693	0.119	75	629	1.31	46.54
15 1	85.79	0.622	0.112	71	664	1.27	51.56
15 30	85.74	0.551	0.106	66	612	1.19	59.98
16 0	85.72	0.479	0.098	61	558	1.15	59.87
16 29	85.75	0.383	0.088	55	492	0.77	66.01
16 59	85.68	0.315	0.082	51	412	0.79	66.48
17 28	85.73	0.378	0.077	46	477	0.76	72.46
17 58	85.70	0.289	0.078	44	483	0.80	70.70
18 27	85.66	0.306	0.076	42	459	0.80	74.00
18 56	85.69	0.303	0.071	39	414	0.77	74.18
19 26	85.65	0.278	0.065	37	348	0.76	79.41
19 55	85.66	0.248	0.059	35	332	0.74	81.56

NASA BASELINE SEAT TEST #1 - 10w

TIME MIN SEC	LOAD CELL	CO2 %	CO %	NOX PPM	CHX PPM	O2 % DEF	SMOKE CELL % TRANS
20 5	85.68	0.239	0.059	34	379	0.73	84.86
20 25	85.68	0.194	0.057	33	338	0.71	84.91
20 34	85.68	0.177	0.055	32	334	0.76	84.98
21 3	85.64	0.136	0.051	30	314	0.68	89.33

NASA BASELINE SEAT TEST #2 - 10W

TIME MIN SEC	LOAD CELL	CO2 %	CO %	NOX PPM	CHX PPM	O2 % DEP	SMOKE CELL % TRANS
0 30	96.01	0.000	0.007	17	47	0.00	34.06
1 0	95.64	0.000	0.017	16	151	0.11	7.33
1 30	95.05	2.023	0.264	111	936	2.29	3.78
2 0	94.60	3.032	0.492	156	1706	4.11	2.90
2 30	94.11	3.335	0.530	189	1989	4.68	1.87
3 0	93.60	3.611	0.592	202	2487	5.17	1.18
3 30	93.17	3.729	0.630	210	2883	5.46	1.64
4 0	92.75	3.802	0.701	193	3072	5.72	1.60
4 30	91.66	3.906	0.700	171	3083	6.10	2.93
5 0	91.54	3.390	0.602	144	2716	5.53	5.42
5 30	91.30	2.940	0.545	123	2557	5.06	7.83
6 0	91.11	2.429	0.442	112	2232	3.67	11.54
6 30	91.03	2.393	0.400	109	1936	3.58	17.67
7 0	90.80	2.542	0.386	115	1714	3.75	24.16
7 30	90.62	2.570	0.360	120	1422	3.41	20.12
8 0	90.46	2.326	0.354	115	1484	3.39	16.38
8 30	90.32	2.236	0.348	111	1587	3.36	16.00
9 0	90.23	2.015	0.327	107	1632	2.93	14.51
9 30	90.06	1.993	0.331	107	1642	3.01	15.20
10 0	89.94	1.917	0.310	111	1542	3.06	15.56
10 30	89.84	1.823	0.302	109	1529	2.92	16.02
11 0	89.73	1.726	0.294	103	1430	2.74	17.71
11 30	89.65	1.612	0.279	97	1325	2.29	14.57
12 0	89.48	1.662	0.297	98	1320	2.48	15.75
12 30	87.92	1.870	0.290	106	1319	2.80	21.91
13 0	87.75	2.365	0.325	117	1303	3.26	20.00
13 30	87.57	2.492	0.336	121	1281	3.47	21.31
14 0	87.37	2.596	0.355	122	1366	3.64	24.62
14 30	87.26	2.360	0.334	114	1284	3.54	25.10
15 0	87.16	2.220	0.331	109	1235	3.30	21.79
15 30	87.03	2.120	0.319	106	1247	3.26	25.73
16 0	86.96	2.058	0.302	105	1215	2.47	25.93
16 30	86.88	1.811	0.279	95	1087	2.33	28.51
17 0	86.87	1.660	0.264	90	1095	2.29	26.73
17 30	86.74	1.479	0.255	84	1088	2.16	27.73
18 0	86.67	1.369	0.237	79	1053	2.04	27.29
18 30	86.57	1.376	0.244	83	1125	2.10	22.94
19 0	86.50	1.388	0.250	82	1218	2.18	19.76
19 30	86.42	1.331	0.247	78	1245	2.12	21.52
20 0	86.36	1.318	0.248	75	1261	2.06	18.32
20 30	86.31	1.345	0.242	72	1294	2.05	19.77
21 0	86.24	1.334	0.242	69	1278	2.03	19.17
21 30	86.26	1.299	0.239	68	1254	1.96	19.68
22 0	86.14	1.313	0.226	68	1171	2.09	20.34

NASA BASELINE SEAT TEST #2 - 10W

TIME MIN SEC	LOAD CELL	CO2 %	CO %	NOX PPM	CHX PPM	O2 % DEF	SMOKE CELL % TRANS
22 30	86.10	1.254	0.209	69	971	1.82	20.89
23 0	86.00	1.203	0.202	71	1021	1.35	21.75
23 30	86.02	1.143	0.197	64	821	1.41	24.96
24 0	85.86	1.046	0.185	59	770	1.41	24.57
24 30	85.86	0.973	0.180	56	811	1.45	28.25
25 0	85.76	0.933	0.168	55	786	1.61	31.83
25 30	85.77	0.210	0.064	27	395	0.54	35.32
26 0	85.76	0.357	0.095	33	492	0.71	42.09
26 30	85.66	0.430	0.099	37	427	1.06	46.51
27 0	85.68	0.592	0.111	39	491	1.27	47.74
27 30	85.66	0.513	0.103	36	550	1.01	55.91
28 0	85.68	0.483	0.105	33	494	0.26	56.67
28 30	85.59	0.626	0.125	38	523	0.53	59.63
29 0	85.59	0.583	0.119	37	544	0.60	62.71
29 30	85.57	0.488	0.113	35	567	0.49	68.11
30 0	85.55	0.382	0.107	32	525	0.44	68.62
30 30	85.55	0.275	0.101	29	538	0.38	71.36
31 0	85.51	0.239	0.093	27	498	0.32	74.72
31 30	85.48	0.209	0.088	25	446	0.25	73.80
32 0	85.47	0.239	0.076	22	400	0.08	74.20
32 30	85.49	0.141	0.058	17	355	0.14	70.24
33 0	85.47	0.158	0.056	17	363	0.13	76.58
33 30	85.45	0.125	0.052	16	329	0.09	78.54
34 0	85.41	0.077	0.047	14	292	0.07	82.01
34 30	85.44	0.053	0.045	14	295	0.06	88.02
35 0	85.42	0.042	0.043	13	294	0.08	88.17
35 30	85.42	0.053	0.047	13	284	0.13	90.48
36 0	85.41	0.076	0.041	13	276	0.10	89.76
36 30	85.39	0.074	0.036	11	262	0.00	94.31

NASA BASELINE SEAT TEST #3 - 10W

TIME MIN SEC	LOAD CELL	CO2 %	CO %	NOX PPM	CHX PPM	O2 % DEP	SMOKE CELL % TRANS
0 30	92.07	0.000	0.000	0	26	0.00	39.43
1 0	91.74	0.321	0.091	13	290	0.33	11.54
1 30	90.97	2.237	0.399	100	879	2.87	2.10
2 0	90.38	4.247	0.638	176	2551	6.25	1.04
2 30	90.01	3.791	0.607	146	1951	5.38	1.35
3 0	89.69	2.358	0.350	107	1337	3.33	2.30
3 30	89.32	3.399	0.480	133	1520	4.92	3.55
4 0	89.02	2.525	0.402	97	986	3.52	5.16
4 30	88.73	2.652	0.378	112	1296	3.26	4.17
5 0	88.46	3.169	0.482	107	1193	4.71	6.76
5 30	88.26	2.067	0.337	73	986	2.60	8.18
6 1	88.10	2.578	0.386	88	1446	3.68	10.27
6 31	87.97	1.937	0.330	62	971	2.80	13.32
7 1	87.83	1.636	0.258	65	1190	2.41	18.13
7 31	87.69	2.127	0.349	70	1256	3.18	21.11
8 1	87.51	1.453	0.258	58	1122	2.03	20.09
8 31	87.34	2.250	0.353	87	1721	3.44	31.47
9 1	87.18	1.713	0.303	65	1270	2.44	29.06
9 31	87.03	1.656	0.255	75	1483	2.45	37.63
10 1	86.88	2.289	0.322	86	1223	3.33	28.75
10 31	86.75	1.422	0.220	62	921	1.45	32.04
11 1	86.64	1.833	0.296	76	1283	2.47	26.38
11 31	86.52	1.334	0.255	51	1054	1.60	23.87
12 2	86.43	1.137	0.205	51	1264	1.10	20.32
12 32	86.33	1.441	0.270	51	1251	2.23	17.64
13 2	86.25	1.014	0.200	40	981	1.30	19.91
13 32	86.19	1.324	0.244	52	1230	2.10	24.39
14 2	86.13	0.975	0.200	36	830	1.32	27.85
14 32	86.09	0.950	0.179	40	966	0.98	34.57
15 2	86.03	0.890	0.182	32	719	0.80	33.47
15 32	85.94	1.013	0.195	37	728	1.03	21.90
16 2	85.86	1.213	0.216	47	778	1.78	27.17
16 32	85.78	1.033	0.167	46	726	1.40	28.30
17 2	85.68	1.102	0.198	46	632	1.47	29.73
17 32	85.61	1.271	0.224	55	791	1.78	26.21
18 2	85.46	1.390	0.233	60	798	1.91	24.56
18 32	85.34	1.396	0.242	63	905	2.01	24.30
19 2	85.18	1.518	0.256	71	1036	2.21	17.72
19 32	85.02	1.685	0.276	80	1161	2.48	16.45
20 3	84.87	1.854	0.295	84	1333	2.67	18.13
20 33	84.69	1.992	0.301	89	1314	2.96	17.38
21 3	84.54	1.454	0.205	77	1087	2.03	19.54
21 33	84.41	1.716	0.240	82	953	2.34	21.51
22 3	84.27	1.696	0.240	82	982	2.37	25.43

NASA BASELINE SEAT TEST #3: - 10W

TIME MIN SEC	LOAD CELL	CO2 %	CO %	NOX PPM	CHX PPM	O2 % DEF	SMOKE CELL % TRANS
22 33	84.16	1.631	0.239	78	995	2.30	32.58
23 3	84.05	1.579	0.227	74	972	2.20	33.20
23 33	83.96	1.482	0.223	69	894	2.10	30.93
24 3	83.89	1.355	0.215	64	956	1.96	30.96
24 33	83.78	1.203	0.203	57	882	1.79	26.73
25 3	83.71	0.993	0.189	50	892	1.59	19.93
25 33	83.65	0.966	0.180	46	901	1.51	20.90
26 3	83.59	0.961	0.168	43	842	1.41	25.94
26 33	83.52	0.898	0.159	40	817	1.32	27.04
27 4	83.48	0.801	0.147	37	784	1.24	30.24
27 34	83.45	0.737	0.134	33	688	1.11	39.38
28 4	83.42	0.714	0.127	30	717	1.04	38.43
28 34	83.38	0.656	0.119	28	636	0.97	34.04
29 4	83.33	0.576	0.114	27	659	0.92	42.41
29 34	83.31	0.495	0.111	28	634	0.92	43.10
30 4	83.28	0.449	0.108	29	597	0.91	39.31
30 34	83.24	0.460	0.105	28	577	0.87	45.85
31 4	83.21	0.390	0.099	26	576	0.82	48.32
31 34	83.19	0.344	0.096	25	527	0.77	55.66
32 4	83.15	0.341	0.091	24	524	0.75	48.65
32 34	83.13	0.435	0.094	26	535	0.77	48.99
33 4	83.11	0.399	0.092	27	537	0.75	52.20
33 34	83.07	0.368	0.090	25	464	0.71	53.21
34 4	83.05	0.388	0.092	23	446	0.68	47.30
34 35	83.04	0.372	0.092	20	499	0.69	53.13
35 5	83.01	0.317	0.088	18	456	0.64	51.76
35 35	83.00	0.309	0.086	17	435	0.61	56.37
36 5	82.98	0.345	0.083	15	426	0.59	52.50
36 35	82.95	0.333	0.083	14	402	0.59	55.96
37 5	82.94	0.304	0.075	13	380	0.54	64.16
37 35	82.94	0.285	0.069	12	322	0.51	75.37
38 5	82.92	0.266	0.065	11	311	0.47	71.85
38 35	82.93	0.253	0.060	10	305	0.43	80.97
39 5	82.90	0.223	0.053	9	250	0.39	78.42
39 35	82.92	0.206	0.052	8	259	0.38	76.33
40 5	82.89	0.186	0.049	7	205	0.35	87.93
40 35	82.90	0.167	0.044	6	263	0.32	85.07
41 5	82.90	0.136	0.042	6	254	0.31	91.94
41 35	82.89	0.103	0.040	5	239	0.29	88.46
42 5	82.89	0.080	0.038	5	288	0.27	84.16
42 35	82.87	0.070	0.036	5	286	0.26	87.99
43 5	82.88	0.060	0.035	5	273	0.26	83.56
43 35	82.87	0.040	0.034	5	285	0.24	87.13
44 5	82.85	0.063	0.033	5	262	0.24	84.60

NASA BASELINE SEAT TEST #3 - 10W

TIME MIN SEC	LOAD CELL	CO2 %	CO %	NOX PPM	CHX PPM	O2 % DEF	SMOKE CELL % TRANS
44 35	82.85	0.050	0.034	5	298	0.23	83.65
45 5	82.82	0.083	0.033	4	289	0.24	82.43
45 35	82.83	0.082	0.032	4	252	0.23	84.68
46 5	82.83	0.073	0.030	4	267	0.23	85.24
46 35	82.81	0.051	0.027	3	207	0.20	84.20
47 5	82.59	0.054	0.026	3	203	0.21	86.70
47 35	83.03	0.025	0.024	3	244	0.21	85.07

NASA BASELINE SEAT TEST #4 - SW

TIME MIN SEC	LOAD CELL	CO2 %	CO %	NOX PPM	CHX PPM	O2 % DEF	SMOKE CELL % TRANS
1 0	92.15	0.010	0.029	6	79	0.15	29.81
1 30	91.49	1.346	0.226	77	374	1.98	7.43
2 0	90.92	2.720	0.408	124	1176	3.93	2.40
2 30	90.40	2.897	0.426	121	1496	4.14	2.06
3 0	89.96	2.852	0.441	112	1585	4.20	1.58
3 30	89.12	2.981	0.502	108	1982	4.42	0.84
4 0	88.96	3.050	0.522	102	2286	4.59	1.87
4 30	88.58	3.117	0.561	93	2347	4.65	1.35
5 0	88.21	3.060	0.547	85	2611	4.53	2.19
5 30	87.81	2.805	0.478	78	2153	4.23	3.47
6 0	87.68	2.429	0.405	73	1851	3.57	7.17
6 30	87.45	2.224	0.360	70	1496	3.26	7.87
7 0	87.32	2.022	0.318	66	1375	2.97	12.80
7 30	87.11	1.841	0.290	64	1169	2.70	11.13
8 0	86.99	1.730	0.272	62	1120	2.54	11.06
8 30	86.91	1.662	0.268	60	1111	2.43	15.67
9 0	86.72	1.522	0.254	58	1084	2.25	14.77
9 30	86.62	1.485	0.246	57	1038	2.19	14.67
10 0	86.61	1.433	0.228	56	970	2.11	17.63
10 30	86.41	1.409	0.219	57	802	2.10	15.16
11 0	86.35	1.371	0.210	56	871	2.04	18.88
11 30	86.22	1.317	0.203	54	765	1.98	19.05
12 0	85.97	1.291	0.201	51	684	1.92	19.30
13 0	85.75	1.145	0.179	45	618	1.69	26.38
13 31	85.64	1.063	0.171	42	621	1.56	26.15
14 1	85.60	0.957	0.161	37	594	1.41	26.99
14 31	85.55	0.887	0.152	35	616	1.32	29.93
15 1	85.47	0.807	0.139	32	506	1.23	36.01
15 31	85.50	0.742	0.128	30	522	1.15	40.72
16 1	85.45	0.657	0.115	27	435	1.05	42.65
16 31	85.35	0.620	0.110	26	372	1.02	49.49
17 1	85.32	0.608	0.101	25	347	0.98	47.54
17 31	85.28	0.550	0.091	23	309	0.90	52.67
18 1	85.29	0.495	0.085	21	285	0.82	57.94
18 31	85.25	0.463	0.081	20	335	0.76	60.38
19 1	85.23	0.388	0.070	18	217	0.68	66.23
19 31	85.27	0.351	0.066	16	297	0.61	71.31
20 1	85.24	0.332	0.057	14	244	0.53	73.88
21 1	85.22	0.244	0.047	11	185	0.44	79.21
21 31	85.20	0.181	0.041	11	210	0.39	81.73
22 1	85.20	0.128	0.038	9	117	0.34	82.31
22 31	85.20	0.127	0.032	8	214	0.31	78.22
23 1	85.18	0.133	0.030	7	113	0.28	82.90
23 31	85.16	0.087	0.026	6	207	0.25	84.58

NASA BASELINE SEAT TEST #4 - SW

TIME MIN SEC	LOAD CELL	CO2 %	CO %	NOX PPM	CHX PPM	O2 % DEF	SMOKE CELL % TRANS
24 1	85.12	0.077	0.024	6	109	0.23	86.06
25 1	85.13	0.034	0.021	5	90	0.20	89.05
25 31	85.17	0.007	0.017	4	96	0.19	87.80
26 1	85.19	0.024	0.015	3	116	0.18	89.38
26 31	85.15	0.009	0.014	4	123	0.17	92.54
27 1	85.16	0.000	0.013	3	133	0.16	92.39
27 31	85.13	0.000	0.010	3	77	0.14	93.22
28 1	85.11	0.000	0.008	3	65	0.13	93.31
28 31	85.16	0.000	0.007	2	106	0.12	93.69
29 1	85.12	0.000	0.005	2	58	0.11	100.20
29 31	85.15	0.000	0.004	2	32	0.10	96.19
30 1	85.11	0.000	0.005	2	46	0.09	101.73
30 31	85.10	0.000	0.001	2	73	0.08	101.44
31 1	85.14	0.000	0.001	1	96	0.08	99.63
31 31	85.11	0.000	0.004	2	137	0.07	98.01
32 1	85.17	0.000	0.000	1	122	0.07	99.10
32 31	85.16	0.000	0.000	1	142	0.06	96.93
33 1	85.17	0.000	0.000	1	150	0.06	100.76
33 31	85.18	0.000	0.000	1	90	0.05	103.93
34 1	85.09	0.000	0.000	1	28	0.05	105.64
34 31	85.08	0.000	0.000	1	13	0.05	98.65
35 1	85.12	0.000	0.000	1	130	0.04	97.53
35 31	85.16	0.000	0.000	1	115	0.04	99.15
36 1	85.17	0.000	0.000	1	54	0.04	96.53
37 1	85.16	0.000	0.000	0	31	0.03	95.17
37 31	85.10	0.000	0.000	1	104	0.03	96.16

APPENDIX E
TEMPERATURE DATA

NASA SEATS III

CH 51.... WALL 6 IN. FROM FLOOR--AVG 12 TC'S
 CH 52.... WALL 3 FT. FROM FLOOR--AVG 12 TC'S
 CH 53.... WALL 6 FT. FROM FLOOR--AVG 12 TC'S
 CH 54.... STACK AVERAGE
 CH 55.... WALL 9 FT. FROM FLOOR (3 IN. FROM CEILING)
 CH 56.... CEILING-- 3 INCHES OUT FROM WALL

CH 57.... CEILING (QUAD; 3 FT. X 3 FT. FROM WALL)
 CH 58.... DAPPLE
 CH 59.... AIR UPPER LEVEL
 CH 60.... AIR LOWER LEVEL
 CH 61.... AMBIENT
 CH 62.... ANIMAL EXPOSURE CHAMBER

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS1

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
0 15	56	59	61	62	59	62	63	62	61	62	60	62
0 30	57	58	60	63	59	62	62	63	61	61	60	63
0 45	57	60	60	62	60	62	63	62	62	62	58	63
1 0	56	58	61	62	59	62	63	63	61	61	60	63
1 15	56	60	60	64	60	61	64	61	63	63	59	64
1 30	58	61	62	106	61	67	69	91	95	69	61	62
1 45	58	66	68	191	70	76	80	162	185	83	60	63
2 0	59	70	78	271	79	90	84	236	263	97	60	64
2 15	60	72	89	317	88	100	89	275	299	111	58	64
2 30	60	77	96	341	97	109	96	296	319	121	60	64
2 45	63	79	103	353	105	118	103	310	334	135	58	64
3 0	64	83	109	368	112	125	108	323	346	150	58	66
3 15	65	87	113	372	116	132	113	327	349	166	58	65
3 30	67	89	117	368	120	135	116	325	346	182	58	66
3 45	68	92	121	364	122	139	120	323	338	194	59	64
4 0	69	94	123	364	123	143	122	323	335	201	60	63
4 15	70	97	125	363	127	143	126	324	334	212	59	64
4 30	73	99	128	368	129	146	130	330	341	222	61	64
4 45	73	104	130	380	131	149	134	337	351	232	63	64
5 0	74	107	133	395	135	150	139	348	361	247	60	65
5 15	76	111	137	409	138	154	143	360	370	259	61	65
5 30	77	115	141	419	141	159	146	368	378	271	62	64
5 45	80	118	146	424	145	163	150	376	386	285	61	65
6 0	80	123	148	431	148	167	151	381	389	293	63	64
6 15	82	127	152	424	150	171	155	383	395	317	61	65
6 30	83	134	153	413	153	172	158	373	390	323	61	65
6 45	83	135	157	394	153	172	158	362	373	318	60	65
7 0	83	137	156	376	153	173	158	348	357	306	62	64
7 15	82	138	156	361	153	170	159	334	341	298	63	65
7 30	83	137	156	344	153	169	157	323	327	290	62	65
7 45	82	137	156	332	153	167	157	312	315	283	62	66
8 0	80	139	154	320	153	165	158	302	306	274	61	67
8 15	82	137	154	310	152	165	156	296	297	267	61	66
8 30	81	138	153	302	150	164	156	287	288	259	63	64
8 45	82	137	153	293	150	163	154	281	280	253	62	65

NASA SEATS #1

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEAT91

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
9 0	79	139	151	204	151	160	155	272	272	246	61	66
9 15	80	137	152	276	150	160	153	268	264	240	61	66
9 30	80	137	151	268	150	158	152	261	257	236	61	66
9 45	80	136	150	261	150	157	151	255	251	231	61	66
10 0	80	137	150	253	150	155	150	249	244	226	59	66
10 15	81	135	149	248	148	155	150	244	238	219	61	66
10 30	80	135	149	240	148	152	150	238	232	215	59	66
10 45	79	135	147	235	146	152	149	233	226	208	61	66
11 0	79	134	146	229	147	150	149	227	222	204	60	68
11 15	79	133	146	222	145	150	147	223	215	200	61	66
11 30	79	132	145	217	144	149	146	219	211	196	61	66
11 45	79	132	142	212	144	146	146	213	207	190	60	68
12 0	78	132	140	209	141	147	144	209	202	184	61	66
12 15	78	130	141	202	141	145	143	206	197	183	61	67
12 30	78	131	137	199	140	143	142	201	194	177	61	67
12 45	77	129	138	194	140	141	141	198	190	175	60	68
13 0	77	129	136	191	138	140	140	194	186	172	61	67
13 15	77	127	136	187	138	138	140	190	183	169	61	67
13 30	77	126	134	184	135	140	137	188	179	165	62	65
13 45	76	127	133	180	136	137	138	184	177	163	61	67
14 0	77	124	133	176	136	135	136	183	174	161	59	68
14 15	77	124	132	173	135	134	135	179	171	158	59	68
14 30	77	123	131	170	134	133	134	177	168	156	60	68
14 45	76	123	129	169	132	133	133	174	166	151	63	67
15 0	76	123	128	166	132	131	133	170	163	150	62	67
15 15	76	121	128	163	132	129	132	169	161	150	61	69
15 30	77	119	127	161	130	130	130	168	159	147	63	67
15 45	76	118	127	158	130	129	129	165	156	145	62	67
16 0	75	118	126	155	129	128	128	162	153	145	62	68
16 15	75	118	124	155	127	127	127	160	152	140	64	67
16 30	75	116	124	151	127	126	126	159	150	140	62	67
16 45	75	116	122	151	126	125	126	156	150	137	62	67
17 0	75	115	123	149	127	124	125	154	148	138	61	67
17 15	75	113	122	147	126	123	123	153	146	135	62	67
17 30	76	113	120	147	124	123	123	151	145	133	62	67
17 45	74	113	120	144	126	121	123	150	144	132	60	69
18 0	75	111	119	143	123	122	121	150	142	130	62	67
18 15	75	111	118	142	122	122	120	148	141	128	62	67
18 30	74	110	118	139	122	120	120	146	138	129	61	68
18 45	74	109	116	139	120	120	119	145	137	125	63	66
19 0	73	109	115	138	120	118	119	143	137	123	63	68
19 15	73	107	116	136	120	117	117	142	134	123	61	68

NASA SEATS #1

TEST DATE: 11/24/00

PROJECT NUMBER: 01-5584-001

FILE: NSEATS1

TIME MIN SEC	CODE TEMPERATURES										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
19 30	74	107	115	133	120	116	117	140	133	123	60	68
19 45	74	106	113	133	119	116	116	140	132	120	61	68
20 0	73	107	112	133	110	115	116	130	132	118	61	68
20 15	73	106	113	130	119	113	116	137	130	120	59	69
20 30	72	105	111	130	116	114	114	135	129	117	63	67
20 45	73	105	111	129	118	112	114	134	128	117	60	70
21 0	73	102	110	129	116	113	112	134	127	116	62	68
21 15	72	103	109	127	114	113	112	133	126	114	63	67
21 30	71	103	109	126	115	111	113	130	125	113	61	68
21 45	72	103	107	125	114	110	112	130	124	111	61	68
22 0	72	102	108	123	115	110	110	130	123	113	60	69
22 15	71	102	107	123	114	109	111	127	122	110	61	69
22 30	73	100	107	122	113	109	109	128	121	109	62	68
22 45	72	99	106	121	112	109	108	127	120	109	61	68
23 0	71	99	106	119	113	107	109	125	119	108	59	70
23 15	71	98	105	119	110	107	107	125	117	107	61	69
23 30	71	98	104	118	111	105	108	123	117	106	60	69
23 45	71	96	104	117	109	106	106	123	116	106	61	69
24 0	71	96	104	115	109	105	106	121	114	105	60	69
24 15	71	96	102	116	107	106	105	121	114	103	61	67
24 30	71	95	102	115	108	104	104	121	113	103	61	68
24 45	70	95	102	113	107	104	104	120	112	104	61	69
25 0	70	96	100	114	106	103	104	118	113	100	62	68
25 15	70	96	99	113	106	102	103	116	112	99	60	69
25 30	70	95	98	113	105	102	103	116	111	99	62	69
25 45	70	94	99	111	104	103	101	116	109	99	61	68
26 0	69	95	98	110	105	101	102	114	109	99	61	69
26 15	69	91	99	109	104	101	100	115	107	98	61	69
26 30	69	93	98	110	102	101	100	113	108	98	62	67
26 45	69	92	97	109	102	100	99	113	107	97	62	67
27 0	69	91	97	107	104	98	100	112	107	98	58	71
27 15	69	92	96	108	101	99	99	112	106	95	62	69
27 30	69	90	96	106	102	98	98	111	105	96	60	69
27 45	67	91	95	106	102	97	98	109	105	95	60	69
28 0	68	91	93	106	101	98	98	109	104	94	60	69
28 15	68	90	94	105	99	98	96	109	103	95	60	68
28 30	68	89	95	103	100	96	96	108	102	95	60	69
28 45	67	90	93	103	100	95	97	106	102	93	61	69
29 0	68	89	92	104	98	95	96	106	102	92	61	69
29 15	67	90	91	102	98	95	96	106	101	92	61	69
29 30	67	89	91	102	98	95	95	105	102	91	61	69
29 45	67	89	91	102	98	95	95	105	100	91	61	70

NASA SEATS #1

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS1

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
30 0	68	86	93	100	97	95	94	105	98	91	61	69
30 15	67	86	92	99	97	94	94	104	98	92	61	70
30 30	67	86	92	98	97	93	93	103	97	91	61	69
30 45	67	87	90	100	95	94	93	103	98	89	63	68
31 0	67	86	90	98	97	91	93	102	97	89	61	71
31 15	67	86	90	97	97	92	93	102	97	90	59	70
31 30	67	86	89	98	94	93	91	102	96	89	62	68
31 45	67	85	90	96	95	91	92	102	96	90	59	69
32 0	68	84	89	97	94	92	91	102	95	88	62	68
32 15	67	85	89	96	95	90	92	99	95	88	61	70
32 30	67	84	88	95	95	90	91	99	95	88	59	70
32 45	65	85	87	95	94	90	91	98	94	87	61	68
33 0	67	84	87	96	93	90	91	98	95	87	61	68
33 15	67	82	88	94	92	90	89	99	92	87	61	68
33 30	67	83	88	94	93	90	89	98	91	87	61	68
33 45	66	83	86	95	92	90	90	97	94	87	61	68
34 0	66	83	86	94	91	90	88	97	93	86	62	66
34 15	65	83	86	93	92	88	90	95	92	86	60	68
34 30	66	83	85	94	90	89	87	96	92	85	62	66
34 45	66	81	87	92	91	88	87	96	90	85	61	67
35 0	66	82	85	93	89	89	87	95	91	84	63	66
35 15	65	83	84	92	91	87	88	94	91	85	61	67
35 30	65	83	84	91	91	87	88	94	90	84	61	67
35 45	65	81	84	91	91	86	88	94	90	84	60	68
36 0	65	81	84	91	90	86	87	94	89	83	60	69
36 15	66	80	84	91	88	87	86	94	89	83	61	66
36 30	65	80	83	91	88	87	86	93	89	82	63	66
36 45	66	80	84	88	89	86	86	93	88	83	60	67
37 0	65	81	82	90	89	86	86	91	90	83	61	67
37 15	64	80	83	89	88	85	86	91	88	82	61	67
37 30	66	79	83	89	87	86	84	93	87	82	61	67
37 45	64	80	83	88	88	84	86	91	87	82	60	68
38 0	65	81	81	88	87	85	85	90	87	82	61	67

PAGE 1

NASA SEATS 02

CH 51.... WALL 6 IN. FROM FLOOR--AVG 12 TC'S
 CH 52.... WALL 3 FT. FROM FLOOR--AVG 12 TC'S
 CH 53.... WALL 6 FT. FROM FLOOR--AVG 12 TC'S
 CH 54.... STACK AVERAGE
 CH 55.... WALL 9 FT. FROM FLOOR (3 IN. FROM CEILING)
 CH 56.... CEILING-- 3 INCHES OUT FROM WALL

CH 57.... CEILING (QUAD; 3 FT. X 3 FT. FROM WALL)
 CH 58.... DAPPLE
 CH 59.... AIR UPPER LEVEL
 CH 60.... AIR LOWER LEVEL
 CH 61.... AMBIENT
 CH 62.... ANIMAL EXPOSURE CHAMBER

TEST DATE: 11/21/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS2

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
0 15	59	60	60	62	62	59	62	61	63	61	58	59
0 30	60	59	61	63	61	60	61	62	62	62	56	60
0 45	59	59	61	62	61	60	62	63	62	61	57	59
1 0	59	60	60	62	62	60	62	61	62	61	57	59
1 15	58	62	59	64	60	60	62	62	64	63	58	58
1 30	60	62	61	89	62	63	65	77	80	67	60	58
1 45	62	64	63	135	65	68	67	119	127	73	58	59
2 0	63	66	69	180	69	75	71	158	169	82	58	60
2 15	64	68	75	225	74	81	75	196	205	93	57	60
2 30	66	71	82	261	82	88	81	228	246	104	57	60
2 45	66	75	87	289	86	96	86	255	272	114	58	58
3 0	68	78	93	308	91	103	90	273	284	125	57	60
3 15	70	80	98	320	96	109	95	285	292	134	57	60
3 30	71	82	103	329	102	114	100	293	304	142	57	60
3 45	71	86	106	334	106	118	105	296	308	149	58	60
4 0	74	87	109	339	109	122	108	300	305	160	56	61
4 15	75	91	112	347	114	126	113	305	312	170	58	60
4 30	75	94	115	360	117	130	118	316	322	185	59	59
4 45	78	95	120	365	122	135	123	323	333	201	58	61
5 0	77	100	122	372	125	139	126	328	339	213	59	59
5 15	80	103	126	372	127	143	129	331	341	224	58	61
5 30	82	106	129	370	131	143	133	329	339	231	58	61
5 45	83	110	131	370	132	147	135	330	336	240	58	61
6 0	86	116	134	368	135	150	139	332	337	257	58	61
6 15	88	120	137	360	140	150	141	328	340	270	58	61
6 30	87	124	140	349	140	150	142	320	332	269	58	61
6 45	87	126	140	336	139	150	141	311	316	263	57	61
7 0	87	127	140	320	139	150	142	300	301	256	58	61
7 15	87	126	140	306	140	149	142	288	291	248	56	63
7 30	86	127	140	295	140	147	142	277	280	235	58	62
7 45	85	128	138	283	139	146	142	268	269	229	60	60
8 0	85	127	138	273	138	145	140	261	258	224	58	62
8 15	86	125	137	262	138	143	140	252	248	219	57	62
8 30	86	125	137	252	137	142	140	245	240	212	56	63
8 45	84	125	136	244	137	139	140	236	233	203	58	62

NASA SEATS #2

TEST DATE: 11/21/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS2

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
9 0	83	126	134	237	136	140	138	231	226	196	60	60
9 15	83	124	133	229	135	138	137	224	219	192	58	62
9 30	83	123	133	222	134	137	136	219	211	187	58	62
9 45	83	122	132	214	133	136	135	214	204	184	57	62
10 0	82	121	131	208	134	134	135	207	200	178	58	63
10 15	82	121	130	202	133	132	134	202	196	173	58	62
10 30	81	121	128	198	131	132	133	198	191	169	59	62
10 45	81	120	128	192	130	131	131	194	186	166	59	62
11 0	81	119	127	187	130	130	130	191	181	163	60	63
11 15	81	118	127	182	131	129	130	186	178	160	59	63
11 30	81	118	126	179	130	127	130	182	175	156	59	63
11 45	80	118	125	177	127	127	127	180	172	153	59	63
12 0	80	117	124	174	127	127	127	177	168	151	60	63
12 15	80	115	125	169	127	125	127	174	166	150	58	63
12 30	79	114	124	166	127	124	126	172	163	149	58	64
12 45	79	115	122	164	126	123	125	169	162	144	60	63
13 0	79	114	122	162	127	122	125	166	159	143	59	63
13 15	79	114	120	160	123	123	123	165	156	142	59	63
13 30	78	114	119	159	123	122	122	163	154	140	59	63
13 45	79	111	120	155	123	120	122	161	151	140	58	65
14 0	79	111	119	154	123	120	121	159	150	138	58	64
14 15	78	111	118	152	123	118	121	156	150	134	60	63
14 30	78	111	117	150	123	117	120	154	149	133	59	63
14 45	77	110	116	150	122	117	120	153	149	131	59	63
15 0	77	111	115	150	120	117	118	152	147	131	60	63
15 15	77	109	116	149	120	118	117	152	145	130	59	63
15 30	77	108	115	147	121	115	118	150	145	129	59	63
15 45	76	109	114	146	120	115	117	150	145	127	61	63
16 0	76	108	113	146	117	115	115	150	142	127	58	63
16 15	76	107	113	144	117	114	114	150	139	127	58	63
16 30	76	105	113	141	118	113	115	147	140	125	58	63
16 45	76	106	112	140	118	112	115	145	138	123	58	63
17 0	75	106	110	140	116	112	113	144	137	122	59	63
17 15	75	106	109	139	115	111	112	143	135	121	58	63
17 30	75	104	109	137	114	111	112	142	134	120	58	64
17 45	75	103	109	135	114	110	110	141	131	120	58	64
18 0	75	101	109	132	114	109	111	139	131	118	58	65
18 15	75	101	108	131	115	108	110	136	130	117	58	64
18 30	74	102	106	130	113	108	110	135	130	114	60	63
18 45	75	101	106	130	111	107	109	134	127	115	58	64
19 0	75	101	106	129	111	107	108	133	126	114	58	64
19 15	74	99	105	126	113	105	109	131	125	113	58	64

NASA SEATS #12

TEST DATE: 11/21/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS2

TIME MIN SEC	C O D E				T E M P E R A T U R E S						AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
19 30	74	99	105	126	111	106	108	130	126	111	59	63
19 45	74	100	103	126	110	105	106	130	124	112	58	63
20 0	74	98	103	124	109	106	106	130	122	111	58	64
20 15	73	98	103	123	108	105	105	129	121	110	58	64
20 30	73	98	102	122	108	104	104	128	120	110	58	64
20 45	73	98	101	122	108	103	104	126	120	109	58	64
21 0	73	97	101	121	106	103	103	125	119	108	58	64
21 15	73	96	101	120	106	103	103	125	118	108	58	64
21 30	72	97	99	119	107	102	103	123	117	106	58	64
21 45	71	96	100	118	106	101	103	122	116	106	59	63
22 0	72	95	99	116	106	101	102	121	116	104	60	63
22 15	72	94	99	116	106	99	102	119	116	104	58	64
22 30	72	94	99	115	106	99	102	119	116	102	59	64
22 45	72	94	98	114	105	98	102	118	115	102	58	64
23 0	72	92	99	113	105	98	100	118	113	103	58	65
23 15	72	92	98	112	105	98	100	117	112	103	58	64
23 30	72	92	97	113	105	98	100	116	112	102	58	64
23 45	71	91	98	111	104	98	99	116	111	102	58	64
24 0	71	92	96	112	103	98	99	116	111	100	60	63
24 15	71	92	96	112	103	97	98	115	112	99	59	64
24 30	71	92	95	112	102	96	98	115	110	99	59	63
24 45	71	91	95	112	101	96	96	115	110	100	58	64
25 0	72	89	96	109	102	96	97	114	109	100	58	65
25 15	71	90	95	110	102	94	97	113	109	99	58	65
25 30	71	91	94	110	102	95	97	113	110	97	60	63
25 45	71	89	94	110	100	95	95	114	107	100	58	65
26 0	72	88	94	109	101	95	95	113	107	100	56	67
26 15	69	90	93	110	100	94	95	112	108	97	59	63
26 30	71	89	93	109	99	95	94	113	106	98	58	65
26 45	70	89	92	109	98	95	94	113	106	98	58	65
27 0	71	87	92	108	99	93	93	112	105	98	57	65
27 15	71	87	93	106	99	93	93	111	106	97	57	66
27 30	71	87	91	107	98	93	93	111	105	98	56	66
27 45	70	87	91	107	98	92	92	111	104	98	57	65
28 0	70	87	91	107	97	93	92	110	105	96	58	65
28 15	70	87	90	107	97	92	91	109	105	95	59	65
28 30	70	87	89	107	97	92	92	109	105	95	59	65
28 45	70	87	90	106	98	91	92	108	106	94	59	65
29 0	70	86	90	105	98	91	91	107	104	95	59	65
29 15	70	86	90	106	97	91	91	108	102	96	57	66
29 30	70	86	89	105	95	91	90	109	103	95	58	65
29 45	70	84	90	104	96	91	91	107	103	95	58	66

NASA SEATS #2

TEST DATE: 11/21/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS2

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
30 0	70	85	89	103	98	90	91	106	103	94	58	65
30 15	69	85	89	104	96	89	91	106	104	92	58	65
30 30	69	86	87	104	95	90	90	106	102	93	59	64
30 45	69	85	87	104	94	91	89	107	101	93	58	65
31 0	70	84	88	103	95	89	88	106	100	95	58	66
31 15	69	83	87	102	96	89	89	104	101	92	58	66
31 30	69	84	87	102	95	87	89	103	101	92	58	65
31 45	68	85	86	102	94	88	88	104	100	91	59	64
32 0	69	84	86	102	94	88	87	103	100	91	58	65
32 15	69	83	87	101	93	89	87	104	98	91	58	65
32 30	70	82	87	100	93	88	87	103	98	92	56	66
32 45	69	82	87	98	94	87	87	102	98	90	58	65
33 0	68	83	86	99	93	87	88	101	99	88	58	65
33 15	68	83	86	98	93	86	88	100	98	88	57	64
33 30	67	83	85	98	92	87	87	100	98	87	59	63
33 45	68	82	85	98	91	87	86	101	95	89	57	64
34 0	68	81	85	96	93	86	87	99	96	88	57	64
34 15	68	82	84	96	90	86	85	100	95	88	57	63
34 30	69	80	85	95	91	86	85	98	94	88	55	66
34 45	68	80	84	95	92	85	86	97	94	87	57	64
35 0	67	81	83	95	89	86	84	98	93	87	58	64
35 15	68	79	84	93	91	85	84	97	93	87	56	65
35 30	68	79	84	93	90	84	84	96	93	86	57	64
35 45	67	80	83	93	90	83	85	95	94	84	57	63
36 0	67	81	81	94	89	84	83	95	92	85	58	63
36 15	68	79	83	91	91	83	84	94	91	85	58	63
36 30	67	80	82	91	89	83	84	94	92	83	59	63
36 45	67	80	82	92	87	83	82	95	91	84	59	63
37 0	67	79	82	90	90	83	83	93	91	84	58	63
37 15	67	80	80	91	88	83	83	93	90	83	60	62
37 30	68	78	81	90	88	82	82	93	89	85	57	63
37 45	67	79	81	89	89	82	83	91	89	83	58	63
38 0	67	79	80	90	86	83	81	92	88	83	58	63

NASA SEATS #4

CH 51.... WALL 3 IN. FROM FLOOR--AVG 12 TC'S
 CH 52.... WALL 3 FT. FROM FLOOR--AVG 12 TC'S
 CH 53.... WALL 3 FT. FROM FLOOR--AVG 12 TC'S
 CH 54.... STACK AVERAGE
 CH 55.... WALL 9 FT. FROM FLOOR (3 IN. FROM CEILING)
 CH 56.... CEILING-- 3 INCHES OUT FROM WALL

CH 57.... CEILING (QUAD; 3 FT. X 3 FT. FROM WALL)
 CH 58.... BAFFLE
 CH 59.... AIR UPPER LEVEL
 CH 60.... AIR LOWER LEVEL
 CH 61.... AMBIENT
 CH 62.... ANIMAL EXPOSURE CHAMBER

TEST DATE: 11/26/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS4

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
0 15	44	49	46	52	48	49	49	50	51	49	45	48
0 30	45	46	47	51	48	49	49	51	49	49	44	48
0 45	45	46	48	51	48	49	49	50	49	49	44	49
1 0	44	46	48	51	48	49	49	51	50	50	43	49
1 15	45	46	48	52	48	49	49	51	50	51	43	49
1 30	45	49	47	68	47	50	50	58	58	54	44	48
1 45	45	50	47	92	49	52	51	78	76	56	45	47
2 0	46	50	49	121	51	55	53	98	94	61	45	47
2 15	46	53	52	149	54	58	55	122	119	66	44	49
2 30	48	53	55	169	58	62	58	143	139	75	44	49
2 45	49	55	58	187	58	67	58	157	153	82	44	48
3 0	51	56	62	199	62	71	61	169	162	89	45	49
3 15	51	59	64	214	64	75	63	183	177	98	44	49
3 30	51	63	67	236	70	80	70	201	204	116	45	50
3 45	53	65	74	267	74	88	71	231	235	137	45	49
4 0	54	69	78	278	79	92	75	237	244	144	45	50
4 15	56	69	82	280	83	96	77	240	241	156	45	51
4 30	56	74	84	287	86	98	81	243	246	167	46	51
4 45	57	74	88	290	90	101	83	247	250	177	44	52
5 0	58	76	92	294	92	105	85	252	256	186	43	54
5 15	58	80	94	300	95	108	88	257	263	194	45	53
5 30	60	81	97	301	97	112	90	260	264	200	45	53
5 45	60	86	98	303	100	114	93	262	271	205	44	54
6 0	61	88	101	304	101	117	94	264	272	210	45	54
6 15	61	91	102	299	104	119	96	262	271	211	45	54
6 30	61	94	104	290	106	120	98	257	268	214	45	55
6 45	62	94	106	279	107	119	98	251	261	214	45	56
7 0	62	96	106	270	106	121	98	245	253	212	45	56
7 15	62	95	106	259	106	120	98	236	244	206	45	57
7 30	62	100	105	250	106	119	99	229	237	200	47	56
7 45	61	97	106	239	106	118	99	222	229	195	43	59
8 0	60	96	106	231	106	117	99	214	221	189	42	58
8 15	60	98	105	223	106	116	100	206	214	185	44	58
8 30	60	99	104	216	104	115	98	200	207	179	44	57
8 45	59	95	105	207	104	114	98	194	200	175	42	58

NASA SEATS #4

TEST DATE: 11/26/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS4

TIME MIN SEC	C U B E				T E M P E R A T U R E S						AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
9 0	60	99	102	202	103	113	98	188	194	169	45	57
9 15	60	95	102	195	103	112	98	183	188	166	44	58
9 30	59	98	101	189	103	111	99	177	185	161	45	58
9 45	59	95	102	183	102	110	97	173	178	157	43	58
10 0	58	94	102	178	102	109	97	169	174	155	43	59
10 15	59	95	100	173	102	107	97	164	170	150	44	58
10 30	59	98	98	170	100	107	97	161	165	148	45	57
10 45	58	93	99	163	100	106	96	157	161	146	44	60
11 0	59	93	98	159	99	106	95	154	157	143	45	58
11 15	58	95	97	156	97	106	95	150	154	140	45	58
11 30	59	96	95	153	98	104	95	150	152	137	45	58
11 45	58	96	95	150	98	104	95	147	150	136	45	59
12 0	58	96	94	150	97	103	95	145	150	134	45	58
12 15	58	92	94	147	97	102	94	142	146	132	45	58
12 30	58	91	95	144	96	102	93	141	143	131	43	59
12 45	56	92	93	143	96	101	94	138	143	129	45	59
13 0	58	91	93	140	96	100	93	137	140	128	44	59
13 15	58	93	91	140	93	100	91	136	138	127	45	58
13 30	57	91	91	137	95	99	92	133	138	125	44	58
13 45	58	92	90	137	93	99	91	133	135	123	46	57
14 0	56	89	90	134	92	99	91	132	132	122	45	58
14 15	57	90	89	133	91	98	90	131	132	121	45	58
14 30	57	88	89	131	92	97	90	129	129	120	45	58
14 45	56	89	88	130	90	97	89	128	129	119	45	58
15 0	57	87	88	128	91	96	89	127	126	117	44	58
15 15	56	87	88	126	91	95	89	125	126	116	44	60
15 30	57	86	88	125	90	95	88	124	123	115	45	59
15 45	56	87	87	123	91	94	89	122	124	114	44	60
16 0	56	87	86	123	90	94	89	121	123	113	44	58
16 15	56	85	86	122	89	94	87	121	120	113	45	58
16 30	56	84	85	121	88	93	87	120	119	111	45	58
16 45	56	83	85	119	87	93	87	118	118	112	45	58
17 0	57	88	83	119	87	92	87	118	119	110	45	58
17 15	55	87	83	118	87	91	86	117	118	107	44	58
17 30	55	86	83	118	85	91	85	116	116	108	44	58
17 45	55	82	83	116	86	91	85	115	114	107	44	58
18 0	54	80	83	114	86	90	85	115	115	107	42	60
18 15	56	86	81	115	85	90	85	113	113	106	46	57
18 30	55	85	81	115	84	89	84	113	113	105	45	57
18 45	54	80	82	112	85	88	84	112	113	105	44	59
19 0	54	84	80	112	84	88	84	112	113	104	45	58
19 15	54	79	81	111	83	88	83	110	110	103	44	58

NASA SEATS #14

TEST DATE: 11/26/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS4

TIME MIN SEC	CODE TEMPERATURES										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
19 30	55	80	80	111	83	87	83	111	109	103	45	58
19 45	55	84	79	111	83	87	83	110	109	101	45	57
20 0	55	84	79	110	82	87	82	109	109	102	47	57
20 15	55	83	78	110	82	86	82	108	108	101	46	56
20 30	55	83	78	109	82	85	82	108	107	101	46	57
20 45	54	81	78	107	80	86	80	107	106	100	45	58
21 0	54	80	78	106	80	86	80	106	106	99	45	58
21 15	54	76	78	105	82	84	81	106	105	99	44	59
21 30	53	76	78	104	81	84	80	105	104	99	43	59
21 45	54	77	77	104	82	83	80	104	105	98	45	58
22 0	54	79	76	104	80	83	80	103	105	96	45	58
22 15	54	77	76	104	79	83	79	104	102	97	45	58
22 30	53	75	76	102	79	83	79	102	102	96	44	58
22 45	52	74	76	102	79	82	79	102	102	96	42	59
23 0	53	75	75	101	80	81	79	101	101	95	45	58
23 15	54	75	75	101	78	82	78	101	99	95	44	58
23 30	53	78	75	101	78	81	78	100	101	94	44	58
23 45	53	74	75	100	78	81	78	100	98	96	44	58
24 0	54	78	74	101	76	81	76	100	99	94	44	57
24 15	53	78	73	100	77	80	77	99	100	93	45	57
24 30	53	75	74	99	76	80	76	99	97	93	45	57
24 45	53	73	73	98	78	78	77	98	98	93	45	57
25 0	53	74	73	98	78	78	77	97	98	92	45	57
25 15	53	74	73	98	75	79	75	98	96	92	45	57
25 30	53	76	72	98	74	80	75	98	96	92	45	57
25 45	53	76	72	98	74	79	75	97	96	92	45	57
26 0	52	71	72	96	75	79	75	96	95	91	44	58
26 15	51	71	72	96	75	78	75	96	95	90	43	58
26 30	51	71	72	95	75	78	75	95	95	91	43	59
26 45	54	75	70	97	74	77	75	95	95	91	46	56
27 0	52	74	71	96	75	77	75	95	96	90	45	57
27 15	53	72	71	95	75	76	75	94	95	90	45	58
27 30	53	71	71	95	73	77	73	95	92	90	45	57
27 45	52	70	71	94	75	76	74	94	93	89	45	58
28 0	51	70	71	93	74	76	74	94	93	89	43	58
28 15	53	74	69	95	73	76	74	94	93	88	46	57
28 30	53	74	69	94	73	75	73	93	93	87	46	57
28 45	52	71	70	93	74	75	73	92	92	87	45	57
29 0	52	72	69	94	72	76	72	92	91	87	45	56
29 15	52	72	69	93	71	76	72	92	91	87	45	57
29 30	52	71	69	91	73	75	73	91	91	86	44	58
29 45	52	69	70	91	72	75	72	91	90	86	43	58

NASA SEATS #4

TEST DATE: 11/26/80

PROJECT NUMBER: 01-5584-001

FILE: HSEAT54

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
30 0	52	72	68	92	70	75	71	91	90	85	45	57
30 15	51	68	69	90	72	74	72	90	90	86	43	58
30 30	53	69	68	91	71	75	71	91	88	85	45	57
30 45	52	70	68	91	71	74	70	91	88	84	45	57
31 0	52	71	67	91	70	74	71	89	89	84	45	56
31 15	52	68	68	90	71	74	71	89	87	84	45	57
31 30	52	71	67	91	70	73	71	89	88	83	46	55
31 45	51	68	67	89	72	72	71	88	88	83	45	57
32 0	52	67	67	88	70	73	70	88	88	83	45	57
32 15	52	68	67	88	70	73	70	88	86	83	45	57
32 30	51	67	67	87	71	71	69	87	86	83	45	57
32 45	51	69	66	89	69	72	69	87	87	83	45	57
33 0	51	69	66	88	68	73	69	87	87	82	45	56
33 15	51	68	66	88	68	73	69	87	86	82	45	56
33 30	51	67	67	86	70	71	70	86	86	81	45	56
33 45	51	68	66	87	68	72	68	86	85	81	44	58
34 0	51	67	66	86	68	72	69	86	85	80	45	55
34 15	51	67	66	86	69	70	70	84	85	80	45	56
34 30	52	66	65	85	68	71	68	86	82	79	45	56
34 45	50	65	66	84	69	71	69	84	84	80	45	58
35 0	51	66	65	85	67	71	68	84	83	79	45	56
35 15	50	67	64	85	68	70	69	84	85	79	45	56
35 30	50	66	65	84	68	69	69	83	83	79	45	55
35 45	52	64	65	84	67	70	67	84	81	78	45	56
36 0	50	65	64	83	69	68	68	82	83	78	45	56
36 15	50	64	64	82	68	69	68	83	82	78	45	57
36 30	51	67	63	85	67	70	68	83	82	77	47	54
36 45	50	65	64	83	66	71	67	83	82	77	46	55
37 0	51	64	64	83	67	69	66	83	80	77	45	55
37 15	51	64	64	82	66	69	67	83	80	77	45	55
37 30	50	63	64	81	67	69	67	81	80	77	44	55
37 45	50	65	63	82	65	70	66	82	80	76	45	55
38 0	50	65	63	81	65	70	66	81	79	76	45	55
38 15	50	64	63	81	65	70	66	81	79	76	45	55
38 30	49	65	62	81	66	68	67	80	81	74	45	54
38 45	50	62	63	79	66	68	67	80	79	75	44	57
39 0	50	63	63	79	67	67	66	79	79	75	44	56
39 15	49	62	64	79	66	68	66	79	78	74	43	55
39 30	50	65	61	80	65	68	66	79	79	73	46	54

NASA SEATS #5

CH 51.... WALL 6 IN. FROM FLOOR--AVG 12 TC'S
 CH 52.... WALL 3 FT. FROM FLOOR--AVG 12 TC'S
 CH 53.... WALL 6 FT. FROM FLOOR--AVG 12 TC'S
 CH 54.... STACK AVERAGE
 CH 55.... WALL 9 FT. FROM FLOOR (3 IN. FROM CEILING)
 CH 56.... CEILING-- 3 INCHES OUT FROM WALL

CH 57.... CEILING (QUAD; 3 FT. X 3 FT. FROM WALL)
 CH 58.... RAFFLE
 CH 59.... AIR UPPER LEVEL
 CH 60.... AIR LOWER LEVEL
 CH 61.... AMBIENT
 CH 62.... ANIMAL EXPOSURE CHAMBER

TEST DATE: 11/20/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS5

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
0 15	52	56	53	58	52	57	57	57	55	57	53	57
0 30	52	54	54	57	54	55	58	56	58	55	55	55
0 45	51	56	53	58	53	57	57	58	55	57	54	56
1 0	54	53	55	56	54	55	58	55	57	55	54	55
1 15	54	54	55	58	55	54	58	55	60	56	56	53
1 30	54	56	55	79	54	58	59	69	71	60	54	55
1 45	55	57	57	103	56	61	62	89	92	63	54	55
2 0	57	58	60	131	59	64	66	111	117	67	55	55
2 15	57	59	63	156	63	67	70	133	143	71	57	54
2 30	58	63	66	180	66	73	74	150	160	79	55	56
2 45	58	65	69	199	69	78	77	166	176	85	55	55
3 0	60	67	73	212	73	82	82	180	192	91	55	56
3 15	61	69	76	226	76	86	86	191	203	98	55	56
3 30	63	70	81	234	79	89	90	199	215	105	55	55
3 45	63	73	83	247	84	92	95	212	225	113	58	55
4 0	65	75	87	260	87	95	98	222	234	124	57	55
4 15	65	78	90	275	90	100	102	234	244	137	56	57
4 30	67	79	95	293	94	105	107	248	257	149	55	56
4 45	67	82	98	305	99	109	113	261	274	158	56	55
5 0	68	84	102	320	104	113	118	272	284	171	56	55
5 15	70	87	106	335	107	119	123	286	294	186	55	57
5 30	70	90	111	348	112	124	129	296	302	198	55	57
5 45	70	93	114	356	115	129	134	302	308	208	55	57
6 0	71	95	118	358	120	133	139	306	311	216	56	57
6 15	72	96	123	353	123	135	143	304	309	219	56	56
6 30	72	101	124	342	124	138	145	301	306	229	55	57
6 45	72	105	125	332	124	139	145	298	301	234	54	59
7 0	72	106	127	318	126	138	145	289	294	232	55	58
7 15	72	107	127	304	126	137	145	279	284	226	56	58
7 30	72	107	127	291	127	135	145	268	274	219	58	56
7 45	72	109	127	279	126	134	143	259	262	213	56	57
8 0	71	110	126	268	125	133	141	251	251	207	56	58
8 15	71	109	126	256	125	132	141	242	244	201	56	58
8 30	71	109	125	247	125	131	140	235	235	196	56	58
8 45	70	110	123	239	124	130	138	229	227	191	56	58

NASA SEATS #5

TEST DATE: 11/20/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS5

TIME MIN SEC	C U R E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
9 0	70	110	123	231	123	130	137	223	219	189	55	59
9 15	70	109	122	223	123	127	136	216	213	182	56	58
9 30	71	109	123	216	123	126	136	210	209	177	57	58
9 45	71	108	123	209	123	124	135	204	204	172	57	56
10 0	71	107	122	202	122	123	133	199	197	169	56	58
10 15	70	109	120	199	121	124	132	196	191	167	56	58
10 30	69	109	119	193	120	124	131	192	186	164	55	60
10 45	69	109	118	188	119	123	130	187	181	161	54	60
11 0	68	108	118	183	120	121	129	183	178	156	56	58
11 15	68	108	116	178	118	122	127	179	173	154	56	60
11 30	69	107	116	173	118	120	127	175	170	151	55	59
11 45	69	106	116	169	118	119	127	171	167	149	56	58
12 0	69	105	115	166	118	118	126	168	164	147	56	58
12 15	69	106	115	163	117	117	124	165	161	145	56	59
12 30	68	106	114	160	116	116	123	163	158	143	55	59
12 45	68	105	113	157	116	116	123	160	155	141	56	59
13 0	68	104	113	155	116	115	122	157	153	140	56	59
13 15	70	103	113	151	116	114	122	155	151	137	56	59
13 30	69	103	112	150	115	113	121	153	150	136	57	59
13 45	68	103	111	150	114	113	120	152	149	135	57	59
14 0	68	102	111	147	114	112	119	150	147	133	57	59
14 15	68	102	110	146	114	112	119	150	146	132	57	59
14 30	68	102	109	144	113	111	117	148	144	131	57	59
14 45	69	101	109	142	113	110	117	147	143	130	57	59
15 0	68	101	109	140	113	109	116	145	142	128	57	58
15 15	67	101	108	140	112	109	116	144	141	127	58	58
15 30	67	102	107	140	110	110	114	144	137	129	56	61
15 45	67	101	106	138	110	109	113	143	137	128	55	60
16 0	67	100	106	137	111	108	114	141	137	124	58	59
16 15	67	101	106	137	109	108	113	140	136	125	57	59
16 30	67	101	105	136	109	109	111	140	133	126	56	61
16 45	67	99	105	134	109	107	112	138	134	124	57	60
17 0	67	99	105	133	109	106	111	137	132	123	57	59
17 15	67	98	105	131	109	105	111	135	133	120	58	58
17 30	67	98	104	131	108	105	110	135	132	121	58	59
17 45	66	99	102	131	106	106	109	136	128	123	56	61
18 0	67	97	103	130	107	104	109	134	130	121	57	60
18 15	67	96	104	128	108	103	109	132	130	119	57	59
18 30	67	97	102	128	107	103	109	132	129	118	58	59
18 45	67	97	102	128	106	103	108	131	128	118	57	60
19 0	65	98	100	129	105	104	106	132	127	119	57	60
19 15	67	97	101	127	106	103	106	130	126	118	57	60

NASA SEATS 05

TEST DATE: 11/20/80

PROJECT NUMBER: 01-5584-001

FILE: NSEAT55

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
19 30	86	96	100	126	105	103	106	129	125	117	57	60
19 45	85	97	99	127	104	102	105	129	124	117	57	60
20 0	86	96	99	126	103	102	105	129	123	118	56	62
20 15	86	95	99	124	104	101	105	127	124	115	57	60
20 30	86	94	99	123	104	100	105	126	124	114	59	59
20 45	86	95	98	123	103	101	104	126	123	114	57	60
21 0	87	93	99	122	103	99	104	125	122	114	56	60
21 15	86	94	98	122	103	100	103	124	121	113	57	60
21 30	86	92	98	120	103	98	103	123	121	112	56	60
21 45	86	92	97	120	103	98	103	123	122	111	58	59
22 0	86	93	97	120	102	98	102	122	120	111	58	60
22 15	85	93	96	120	101	98	102	122	119	112	57	61
22 30	84	94	95	120	100	99	101	123	118	112	57	61
22 45	85	93	95	120	100	99	100	123	117	112	56	61
23 0	85	91	95	119	101	98	101	121	118	111	57	60
23 15	86	90	96	117	101	97	101	120	117	110	57	61
23 30	85	91	95	117	101	96	101	119	118	108	58	59
23 45	85	90	95	117	101	95	100	118	118	107	58	59
24 0	84	91	94	117	99	96	99	120	116	109	57	61
24 15	85	91	94	116	98	96	98	119	115	110	56	62
24 30	85	90	94	116	99	96	98	118	115	109	57	61
24 45	87	89	94	115	99	95	99	117	115	108	57	61
25 0	85	89	93	115	98	95	99	117	116	107	58	60
25 15	85	90	93	115	98	95	98	117	115	107	57	61
25 30	85	89	92	115	98	95	97	117	113	108	57	61
25 45	86	88	93	114	98	93	98	116	114	107	57	61
26 0	84	90	91	116	96	95	96	117	113	107	57	61
26 15	85	89	91	114	97	94	96	116	113	107	56	62
26 30	85	88	91	114	97	94	96	116	113	106	57	61
26 45	86	87	92	113	97	92	96	114	113	106	56	61
27 0	84	89	91	114	95	93	95	115	113	106	56	61
27 15	84	89	90	114	95	94	95	116	111	106	57	62
27 30	86	87	91	112	95	93	95	114	112	106	57	62
27 45	85	86	91	111	95	92	96	113	111	105	57	61
28 0	84	87	90	112	95	92	95	113	112	103	58	60
28 15	83	88	89	113	95	93	94	114	111	105	56	61
28 30	83	88	89	112	94	92	94	114	111	104	56	62
28 45	84	87	89	112	94	92	94	113	110	105	56	62
29 0	84	87	89	112	94	92	93	113	109	106	55	63
29 15	84	86	89	111	95	91	95	112	112	103	59	60
29 30	84	86	88	111	94	91	94	112	111	104	57	62
29 45	84	87	88	112	92	92	93	113	109	106	56	63

NASA SEATS #5

TEST DATE: 11/20/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS5

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
30 0	64	86	88	111	93	91	93	113	110	105	57	62
30 15	64	85	88	111	93	91	93	112	110	105	57	62
30 30	65	84	89	110	93	90	94	111	110	104	57	62
30 45	64	85	87	111	93	91	93	112	110	104	57	61
31 0	63	86	87	112	91	91	92	113	108	106	56	63
31 15	63	86	87	112	91	91	92	113	108	106	56	63
31 30	63	85	87	111	92	91	92	112	109	104	57	62
31 45	63	84	87	110	92	90	92	111	109	104	57	62
32 0	65	83	87	109	92	89	92	111	109	103	57	62
32 15	64	83	87	109	93	88	92	109	109	102	57	62
32 30	63	85	85	111	91	90	91	111	108	103	58	62
32 45	64	84	86	110	91	90	91	110	108	103	57	62
33 0	64	83	87	109	91	89	91	110	108	102	58	62
33 15	63	84	86	109	91	89	91	110	108	101	58	61
33 30	63	84	85	110	90	90	90	111	106	102	57	62
33 45	63	83	86	109	91	89	90	110	107	102	56	62
34 0	63	83	86	109	91	89	91	110	107	102	57	61
34 15	63	82	86	108	91	87	91	108	108	100	58	60
34 30	63	83	85	109	91	88	91	109	107	100	58	60
34 45	63	83	84	109	89	90	89	110	105	101	57	61
35 0	64	82	85	107	90	88	90	109	106	100	58	61
35 15	63	82	85	108	90	88	90	108	106	98	58	60
35 30	62	84	83	108	89	88	89	108	105	99	58	61
35 45	63	82	84	107	89	88	89	108	105	99	57	61
36 0	64	81	85	105	90	87	90	106	105	98	58	60
36 15	63	81	85	105	90	86	90	106	105	97	57	60
36 30	62	83	83	107	88	88	88	107	104	98	58	61
36 45	64	81	84	105	89	87	89	106	103	97	58	61
37 0	63	81	84	104	90	86	89	105	105	95	58	59
37 15	62	83	82	106	88	87	87	106	102	97	57	60
37 30	62	83	82	105	88	87	87	105	102	96	57	61
37 45	63	81	83	104	88	87	87	105	101	97	57	62
38 0	63	81	83	104	88	87	87	105	101	96	57	61
38 15	63	80	83	103	88	86	88	103	102	94	60	59
38 30	61	81	82	103	87	86	87	104	101	95	58	61
38 45	63	81	82	103	87	86	87	104	99	96	56	63
39 0	64	79	83	102	87	85	88	103	100	94	58	61
39 15	62	80	82	102	87	85	87	102	100	93	58	60
39 30	62	81	81	102	86	87	87	103	99	94	58	61
39 45	63	79	83	100	87	84	87	101	99	93	57	60
40 0	61	81	80	102	86	86	86	102	99	93	57	61
40 15	62	80	81	101	86	85	86	102	98	94	55	62

NASA SEATS #15

TEST DATE: 11/20/80

PROJECT NUMBER: 01-5504-001

FILE: NSEATS5

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
40 30	63	78	82	99	87	83	87	100	99	92	57	60
40 45	62	80	80	101	85	86	85	102	98	92	58	60
41 0	62	79	81	100	85	85	85	101	97	94	55	63
41 15	62	79	81	99	87	83	87	99	99	89	58	59
41 30	62	79	80	99	86	84	86	100	98	91	57	61
41 45	61	79	79	100	85	84	85	100	97	91	57	61
42 0	62	78	80	98	85	84	85	99	96	91	57	61
42 15	63	77	81	97	85	83	86	98	96	90	57	61
42 30	62	78	80	98	85	83	86	98	97	88	59	59
42 45	62	79	79	98	83	84	84	99	95	90	57	61
43 0	63	77	80	96	85	83	85	98	95	89	57	61
43 15	62	77	80	96	86	82	85	96	96	87	57	60
43 30	61	79	78	98	83	83	83	98	95	88	57	61
43 45	62	78	78	97	83	84	83	98	94	89	57	61
44 0	62	78	79	96	83	83	83	98	93	89	55	62
44 15	63	76	80	95	84	82	84	96	94	88	58	61
44 30	63	76	79	95	84	82	84	96	94	87	58	61
44 45	62	76	79	95	84	81	84	95	95	85	58	59
45 0	60	78	78	95	83	82	83	96	93	87	58	61
45 15	61	76	78	95	83	82	83	95	94	86	58	60
45 30	62	76	78	95	83	82	83	95	92	87	58	61
45 45	62	75	78	94	83	82	83	95	92	87	58	61
46 0	62	76	78	94	83	81	83	95	93	86	59	60
46 15	60	77	77	95	82	81	83	95	92	86	58	61
46 30	61	76	78	94	83	81	82	95	91	87	56	62
46 45	63	75	79	92	83	80	83	93	91	85	58	61
47 0	62	76	77	93	83	81	83	94	92	84	58	60
47 15	62	76	77	93	82	81	82	95	90	87	56	63
47 30	61	76	77	94	81	82	82	95	90	87	57	62
47 45	62	74	78	92	83	79	83	92	91	84	58	60
48 0	61	75	77	92	82	80	82	93	91	83	59	60
48 15	61	76	75	93	81	81	81	94	90	85	58	61
48 30	62	74	77	91	82	80	82	93	90	84	58	61
48 45	62	74	77	91	82	80	81	93	90	84	58	61
49 0	61	74	77	91	83	79	82	91	91	82	58	60
49 15	60	75	75	92	81	80	81	92	90	83	58	61
49 30	61	74	76	91	80	81	80	93	87	85	57	62
49 45	62	74	76	90	81	80	81	92	89	83	58	61
50 0	62	72	77	90	81	79	82	91	89	83	58	61
50 15	61	74	75	91	81	79	81	91	89	82	58	61
50 30	60	75	75	91	80	79	80	91	88	83	57	61
50 45	62	73	76	90	80	79	80	91	88	83	57	61

NASA SEATS #5

TEST DATE: 11/20/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS5

TIME MIN SEC	C U B E				T E M P E R A T U R E S						AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
51 0	59	74	75	90	80	79	81	91	89	82	58	61
51 15	61	74	75	91	79	80	80	92	87	83	57	61
51 30	61	73	75	90	79	79	79	90	87	83	56	62
51 45	61	73	75	89	79	79	79	90	87	83	56	62
52 0	62	71	75	89	80	78	80	90	87	82	58	61
52 15	61	72	75	88	80	78	81	89	89	79	58	59
52 30	61	73	75	89	78	79	79	91	85	82	57	62
52 45	60	72	75	89	79	79	79	89	86	81	56	62
53 0	61	72	75	87	80	77	80	88	88	79	58	60
53 15	61	72	75	87	79	77	80	88	88	78	58	59
53 30	61	72	75	87	79	78	80	88	87	79	59	59
53 45	60	72	74	89	77	79	79	89	85	80	57	61
54 0	60	72	74	87	78	78	79	88	84	81	56	63
54 15	61	71	75	86	78	77	79	88	85	79	57	61
54 30	60	72	73	87	79	77	79	87	85	79	58	61
54 45	60	73	73	88	77	79	78	88	85	79	57	61
55 0	60	72	73	87	78	78	78	88	83	80	56	63
55 15	61	71	75	85	79	76	79	87	84	79	58	61
55 30	60	71	73	86	78	77	79	87	84	78	58	61
55 45	60	71	73	86	77	78	78	87	83	80	57	62
56 0	60	71	73	85	78	76	79	86	85	76	61	59
56 15	59	72	72	86	77	77	78	87	84	78	58	61
56 30	60	71	73	86	76	77	78	87	82	78	58	61

NASA SEATS #16

CH 51.... WALL 6 IN. FROM FLOOR--AVG 12 TC'S
 CH 52.... WALL 3 FT. FROM FLOOR--AVG 12 TC'S
 CH 53.... WALL 6 FT. FROM FLOOR--AVG 12 TC'S
 CH 54.... STACK AVERAGE
 CH 55.... WALL 9 FT. FROM FLOOR (3 IN. FROM CEILING)
 CH 56.... CEILING-- 3 INCHES OUT FROM WALL

CH 57.... CEILING (QUAD; 3 FT. X 3 FT. FROM WALL)
 CH 58.... BAFFLE
 CH 59.... AIR UPPER LEVEL
 CH 60.... AIR LOWER LEVEL
 CH 61.... AMBIENT
 CH 62.... ANIMAL EXPOSURE CHAMBER

TEST DATE: 11/21/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS6

TIME MIN SEC	C O D E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
0 15	55	56	55	59	55	56	56	59	57	59	53	56
0 30	55	55	56	58	57	55	58	58	58	58	54	56
0 45	55	56	55	59	56	56	57	58	59	56	56	54
1 0	55	56	56	60	55	56	56	59	57	59	52	57
1 15	56	55	57	59	56	55	58	58	60	59	54	56
1 30	56	58	56	60	56	59	58	71	70	63	54	55
1 45	59	57	58	109	58	61	61	95	97	66	54	56
2 0	57	61	60	140	61	64	63	120	126	70	54	56
2 15	60	62	63	164	63	69	65	144	150	75	54	56
2 30	62	62	68	183	67	72	68	160	167	80	54	56
2 45	62	66	71	202	70	76	71	175	186	84	56	55
3 0	63	69	73	216	73	80	74	189	200	94	54	56
3 15	64	71	76	229	75	85	76	200	210	102	54	57
3 30	66	71	81	237	79	87	80	210	220	109	54	56
3 45	67	74	83	249	83	91	84	219	232	115	54	56
4 0	67	77	86	260	84	96	86	230	238	124	54	57
4 15	69	79	89	266	89	98	90	236	246	130	54	56
4 30	68	82	90	271	91	101	91	241	248	139	54	57
4 45	70	83	94	276	93	104	93	246	248	149	54	57
5 0	71	85	96	280	97	106	96	248	253	153	54	57
5 15	71	87	97	285	97	109	98	253	255	162	54	57
5 30	74	89	99	286	100	109	101	254	256	168	54	58
5 45	74	91	101	288	102	110	104	255	260	172	54	57
6 0	75	94	101	291	102	113	104	257	260	177	54	57
6 15	75	94	104	288	104	113	107	257	259	181	53	58
6 30	74	98	104	280	105	114	108	252	258	186	54	57
6 45	75	99	106	266	107	113	109	243	250	189	54	58
7 0	75	102	105	256	106	115	109	235	240	189	55	58
7 15	75	102	107	243	106	113	110	226	232	183	55	57
7 30	76	102	107	232	107	113	109	218	221	181	54	58
7 45	75	103	106	224	107	113	109	210	214	175	56	56
8 0	75	102	107	215	106	112	109	204	205	172	54	58
8 15	75	103	106	209	105	112	109	199	198	169	54	58
8 30	74	105	105	203	106	111	109	192	194	164	55	58
8 45	75	102	107	196	106	110	109	188	188	162	54	58

NASA SEATS #6

TEST DATE: 11/21/89

PROJECT NUMBER: 01-5584-001

FILE: NSEATS6

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
9 0	73	104	105	192	106	110	109	184	184	158	55	57
9 15	74	103	105	187	105	109	108	181	179	158	52	59
9 30	74	103	105	183	106	108	108	176	177	154	54	58
9 45	74	104	104	182	104	109	107	176	174	151	54	58
10 0	74	103	105	178	104	109	106	173	169	151	54	58
10 15	75	102	105	174	105	108	107	170	168	150	54	58
10 30	74	103	104	172	105	107	108	167	167	147	54	58
10 45	73	103	104	169	105	106	108	165	165	145	55	58
11 0	72	104	102	167	104	107	106	163	161	145	54	58
11 15	73	102	103	164	103	107	106	162	157	143	54	58
11 30	73	101	104	160	105	105	106	158	155	140	54	58
11 45	71	102	102	158	103	106	106	156	153	137	55	58
12 0	72	101	102	155	102	106	105	155	150	137	54	58
12 15	72	100	102	152	102	105	104	151	148	136	52	60
12 30	72	99	102	150	103	103	104	150	147	132	54	59
12 45	71	100	101	148	102	103	104	148	145	128	56	57
13 0	72	98	101	146	102	102	103	146	141	128	54	59
13 15	71	98	100	142	103	101	103	143	139	125	54	58
13 30	71	99	98	142	101	102	102	141	137	123	55	58
13 45	71	97	98	138	101	101	102	139	134	123	53	60
14 0	71	97	98	136	101	100	102	137	134	118	56	58
14 15	71	96	98	134	100	100	99	136	129	120	54	59
14 30	71	94	98	131	100	99	100	133	129	117	54	59
14 45	69	95	96	130	99	98	100	131	127	114	56	57
15 0	70	94	96	128	98	98	99	130	124	116	52	61
15 15	69	95	95	126	99	97	98	128	124	112	57	57
15 30	70	93	95	125	98	97	98	127	121	113	52	61
15 45	69	93	95	122	99	95	98	124	121	110	54	59
16 0	68	94	94	122	97	96	97	123	120	108	55	58
16 15	69	92	94	120	96	96	96	123	116	109	54	59
16 30	69	91	94	117	97	94	97	121	117	107	55	59
16 45	69	91	93	116	97	93	96	119	116	106	54	59
17 0	69	91	92	117	95	95	95	119	114	105	55	59
17 15	68	89	93	113	96	93	95	117	113	104	54	59
17 30	68	90	91	113	95	93	95	115	114	101	56	59
17 45	67	91	91	113	95	93	94	115	111	101	56	58
18 0	67	91	90	112	94	92	94	114	110	100	55	59
18 15	68	89	90	110	94	92	92	114	107	102	54	60
18 30	68	87	91	109	94	91	93	112	108	100	55	59
18 45	68	87	90	107	95	90	92	110	107	98	55	60
19 0	68	87	89	106	95	89	92	109	106	97	55	60
19 15	67	87	88	107	92	91	91	110	105	97	55	60

NASA SEATS #6

TEST DATE: 11/21/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS6

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
19 30	80	85	89	106	92	90	91	109	104	97	54	62
19 45	87	86	88	104	94	88	91	106	104	95	55	60
20 0	86	87	87	104	92	89	90	106	103	94	56	59
20 15	87	86	87	103	90	90	90	107	102	94	56	60
20 30	87	84	87	102	91	88	89	106	101	95	54	62
20 45	87	84	87	101	92	87	89	104	101	92	55	60
21 0	87	83	87	100	91	87	88	104	100	93	55	60
21 15	87	83	86	99	91	86	88	102	100	91	55	60
21 30	87	83	86	99	90	86	88	102	100	89	56	59
21 45	86	84	84	100	89	86	87	102	98	90	55	60
22 0	86	83	85	98	88	87	87	102	97	90	55	60
22 15	87	82	85	97	89	86	87	101	97	91	54	62
22 30	86	82	85	97	89	85	87	99	98	87	57	59
22 45	86	82	84	97	88	86	86	100	95	89	55	60
23 0	86	80	85	95	88	84	86	99	95	89	55	60
23 15	85	82	83	95	88	84	85	98	96	87	57	58
23 30	85	81	83	95	86	85	85	98	93	87	55	60
23 45	86	79	84	93	88	83	85	97	94	87	55	60
24 0	85	81	83	94	87	83	85	96	95	84	57	59
24 15	85	80	82	94	86	84	83	96	92	86	55	61
24 30	85	79	83	91	87	82	84	95	92	86	55	60
24 45	85	79	82	92	87	82	84	94	93	83	56	60
25 0	85	79	81	92	86	83	83	95	90	86	55	61
25 15	85	78	82	90	87	81	83	93	91	84	55	61
25 30	84	79	81	91	86	82	83	93	91	82	57	59
25 45	85	79	80	91	84	82	82	94	90	83	55	61
26 0	85	77	81	89	85	81	82	92	90	83	55	61
26 15	83	79	79	90	84	81	82	91	90	82	56	60
26 30	86	77	80	89	85	81	82	92	88	83	54	62
26 45	84	79	79	90	83	81	80	91	89	82	56	61
27 0	85	77	79	88	84	80	80	91	87	84	54	62
27 15	84	77	79	88	84	80	81	90	88	80	58	59
27 30	84	78	78	89	82	80	79	90	87	81	56	61
27 45	84	76	79	87	83	79	79	90	86	83	54	62
28 0	84	75	79	86	84	78	80	88	86	81	56	61
28 15	84	77	77	87	82	79	79	89	86	80	56	61
28 30	84	75	79	85	83	79	79	88	86	80	55	61
28 45	84	76	78	85	83	77	79	87	87	79	55	61
29 0	84	76	76	86	81	79	78	88	85	79	56	61
29 15	84	75	78	85	82	78	79	87	84	80	54	63
29 30	83	75	77	84	82	77	80	86	86	77	56	61
29 45	83	76	76	85	80	78	77	87	84	78	56	61

NASA SEATS 06

TEST DATE: 11/21/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS6

TIME MIN SEC	C O D E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
30 0	64	75	77	84	81	78	78	87	83	80	54	63
30 15	64	75	76	83	81	76	79	85	85	77	56	61
30 30	63	75	76	83	81	76	77	85	84	76	58	59
30 45	63	74	76	83	80	77	76	86	81	79	55	62
31 0	63	73	77	82	81	76	77	85	83	78	56	61
31 15	63	75	75	83	80	76	77	84	83	77	56	61
31 30	63	73	76	82	81	75	77	84	82	77	56	62
31 45	63	74	75	83	79	77	76	84	82	77	56	61
32 0	63	74	75	83	78	77	76	85	81	76	56	62
32 15	63	73	75	82	79	76	75	84	80	78	55	62
32 30	63	73	75	81	79	75	76	83	83	75	57	60
32 45	62	74	74	82	79	75	75	83	81	75	57	60
33 0	63	73	74	81	78	76	75	83	79	76	56	61
33 15	63	72	75	79	80	74	76	81	80	75	56	61
33 30	62	73	73	81	78	75	75	82	80	74	57	58
33 45	63	73	73	80	77	76	75	83	79	75	56	60
34 0	63	71	74	79	79	74	75	81	79	75	55	60

NASA SEATS #17

CH 51.... WALL 6 IN. FROM FLOOR--AVG 12 TC'S
 CH 52.... WALL 3 FT. FROM FLOOR--AVG 12 TC'S
 CH 53.... WALL 6 FT. FROM FLOOR--AVG 12 TC'S
 CH 54.... STACK AVERAGE
 CH 55.... WALL 9 FT. FROM FLOOR (3 IN. FROM CEILING)
 CH 56.... CEILING-- 3 INCHES OUT FROM WALL

CH 57.... CEILING (QUAD; 3 FT. X 3 FT. FROM WALL)
 CH 58.... RAFFLE
 CH 59.... AIR UPPER LEVEL
 CH 60.... AIR LOWER LEVEL
 CH 61.... AMBIENT
 CH 62.... ANIMAL EXPOSURE CHAMBER

TEST DATE: 11/19/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS7

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
0 15	55	60	63	65	62	64	66	65	63	63	59	66
0 30	55	60	63	64	62	64	66	65	63	63	59	66
0 45	54	62	61	66	63	64	67	63	64	62	60	66
1 0	55	61	61	67	62	64	66	64	65	60	60	66
1 15	56	59	62	65	62	64	65	66	63	62	59	66
1 30	56	60	63	69	63	64	66	67	65	65	59	67
1 45	58	61	64	105	65	68	68	91	93	68	59	67
2 0	57	64	67	152	70	74	74	132	143	74	58	67
2 15	57	67	72	196	73	80	80	164	176	84	60	67
2 30	58	69	77	225	78	85	86	189	199	94	60	67
2 45	60	72	79	248	81	91	91	206	217	102	60	67
3 0	63	73	84	270	84	97	95	225	230	110	60	67
3 15	62	76	87	281	90	99	102	234	243	120	59	68
3 30	63	79	91	287	93	102	106	241	249	130	59	69
3 45	64	83	93	288	95	106	110	244	252	139	60	67
4 0	65	84	96	288	98	107	113	245	251	148	59	69
4 15	67	87	97	289	99	109	115	247	254	153	60	67
4 30	67	90	99	289	101	112	118	248	253	159	60	67
4 45	69	92	101	289	103	113	120	248	255	165	60	68
5 0	69	94	103	287	104	114	122	248	255	170	60	68
5 15	71	96	105	285	106	116	123	251	254	176	59	68
5 30	72	98	107	284	109	117	126	250	254	178	59	68
5 45	72	101	108	283	109	119	128	249	254	181	61	67
6 0	73	102	109	283	110	120	129	251	254	183	61	68
6 15	74	103	111	279	110	122	129	250	251	184	61	67
6 30	74	105	112	268	111	123	129	244	247	188	61	67
6 45	74	106	113	256	112	123	129	236	238	187	60	67
7 0	73	106	113	244	114	120	129	228	228	186	58	68
7 15	73	107	112	236	113	120	128	220	222	179	61	68
7 30	73	107	112	226	112	119	127	213	213	174	61	68
7 45	72	107	113	215	113	117	127	206	204	172	60	70
8 0	71	107	111	207	112	117	126	199	197	166	60	68
8 15	72	106	111	199	111	117	123	193	190	161	62	67
8 30	71	105	111	191	113	115	124	187	184	159	59	69
8 45	70	106	110	185	111	114	123	181	179	154	60	69

NASA SEATS #7

TEST DATE: 11/19/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS7

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
9 0	71	105	109	179	111	113	122	176	173	150	61	68
9 15	71	105	108	174	110	113	121	172	170	147	60	69
9 30	71	103	109	167	110	112	120	168	163	147	60	69
9 45	71	103	108	162	110	111	119	164	158	143	58	69
10 0	70	103	107	159	109	109	119	160	155	140	60	70
10 15	70	103	107	154	109	109	118	156	152	137	60	70
10 30	70	103	106	151	108	109	117	152	150	133	61	69
10 45	70	101	106	150	106	110	115	150	147	130	63	68
11 0	71	100	106	146	106	109	114	150	144	128	61	69
11 15	69	100	105	143	108	106	115	147	141	127	60	71
11 30	70	101	103	140	106	107	114	143	140	123	61	69
11 45	70	100	102	138	106	106	113	142	138	120	61	69
12 0	71	98	103	135	105	106	112	141	134	120	61	69
12 15	70	97	104	132	105	105	111	138	131	119	61	69
12 30	71	97	102	130	105	105	110	137	130	117	61	69
12 45	70	96	102	128	104	104	110	134	127	115	61	69
13 0	70	97	101	127	102	105	109	132	127	113	62	67
13 15	69	97	99	126	103	103	109	129	126	110	61	69
13 30	69	96	100	124	102	103	108	128	123	110	62	69
13 45	69	95	99	122	102	103	107	127	121	109	60	68
14 0	68	95	99	121	102	102	107	125	120	106	62	68
14 15	68	95	98	120	101	101	106	124	119	106	62	68
14 30	68	94	98	118	100	102	105	123	117	105	61	68
14 45	68	94	98	116	102	99	106	121	116	105	59	71
15 0	68	93	98	114	100	99	105	120	114	105	58	70
15 15	68	93	97	114	101	98	105	118	113	102	59	70
15 30	68	94	95	113	100	98	104	118	114	100	60	69
15 45	68	93	95	113	99	98	103	117	112	99	62	68
16 0	67	92	95	112	98	98	103	116	111	98	61	69
16 15	69	91	95	110	98	98	101	116	108	99	60	70
16 30	67	90	95	108	98	97	102	114	108	100	60	70
16 45	66	91	94	108	98	96	102	112	108	97	60	69
17 0	67	91	92	108	97	96	101	111	109	95	61	69
17 15	67	91	93	108	97	95	100	111	106	94	63	69
17 30	67	90	93	106	95	96	99	111	105	95	62	69
17 45	68	88	93	105	96	95	98	111	103	94	61	70
18 0	67	88	92	105	96	95	98	109	104	93	61	70
18 15	67	88	92	103	97	93	99	108	103	93	61	71
18 30	66	90	91	103	95	93	98	106	104	91	61	69
18 45	67	88	91	103	95	93	97	106	102	91	63	69
19 0	66	88	90	103	95	93	97	106	101	90	63	69
19 15	67	87	91	101	94	93	96	106	100	91	61	69

NASA SEATS #17

TEST DATE: 11/19/80

PROJECT NUMBER: 01-5504-001

FILE: NSEATS7

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
19 30	66	87	90	102	93	92	96	104	100	89	63	68
19 45	67	86	90	99	94	92	95	105	98	90	61	70
20 0	67	86	90	99	93	92	95	104	98	89	61	70
20 15	67	86	89	98	94	91	95	103	98	89	59	71
20 30	66	85	89	97	93	91	94	102	97	90	59	71
20 45	66	85	89	96	93	90	94	102	96	90	60	71
21 0	66	84	89	96	92	90	93	101	95	89	61	70
21 15	64	86	88	96	93	89	94	99	96	87	61	70
21 30	65	86	87	96	92	89	93	99	97	85	61	70
21 45	64	86	87	95	92	89	93	98	96	86	62	70
22 0	65	85	86	96	91	89	92	98	96	84	62	70
22 15	65	84	86	96	91	89	91	98	95	84	63	69
22 30	65	84	86	95	91	88	91	98	94	83	63	70
22 45	66	83	86	94	90	88	90	98	92	85	62	70
23 0	65	82	87	92	91	87	91	97	92	86	61	71
23 15	64	83	86	93	91	86	91	95	92	84	61	70
23 30	64	83	85	92	90	87	91	95	92	83	62	70
23 45	64	83	84	92	90	86	90	94	92	83	61	70
24 0	65	82	85	91	90	86	90	94	91	83	61	71
24 15	63	83	84	91	89	86	90	93	91	83	61	70
24 30	64	82	84	91	89	85	89	93	90	83	61	70
24 45	64	82	83	91	88	86	88	93	91	80	62	70
25 0	64	81	83	91	87	86	87	94	90	82	62	68
25 15	64	81	83	91	87	85	87	92	90	80	63	70
25 30	65	80	83	90	87	86	87	93	88	82	61	70
25 45	65	80	83	89	87	85	86	93	87	82	61	70
26 0	64	79	83	88	87	85	86	92	86	82	61	70
26 15	65	79	82	88	86	85	86	92	87	81	61	70
26 30	64	79	82	88	85	85	85	91	87	81	61	70
26 45	64	79	82	88	85	84	85	91	87	80	61	70
27 0	64	79	81	87	85	83	85	91	86	80	61	70
27 15	65	78	81	87	85	83	85	91	86	80	60	70
27 30	64	78	81	86	85	83	84	90	84	79	60	71
27 45	63	79	80	87	84	83	85	88	86	78	62	70
28 0	63	79	80	87	83	83	84	88	86	78	63	69
28 15	63	79	79	87	83	82	85	88	85	77	62	70
28 30	63	79	79	87	83	82	84	87	85	77	62	70
28 45	63	79	79	86	83	82	84	87	86	76	61	71
29 0	63	78	79	86	83	82	84	87	84	77	63	70
29 15	63	78	78	85	83	82	83	86	84	76	63	70
29 30	63	79	78	85	83	81	83	86	85	76	63	71
29 45	63	77	79	84	82	82	82	87	83	77	63	70

NASA SEATS 117

TEST DATE: 11/19/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS7

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
30 0	63	76	79	84	82	82	82	87	83	77	62	70
30 15	64	75	79	83	82	81	82	86	81	77	62	71
30 30	63	77	79	83	81	82	82	86	82	75	63	69
30 45	63	76	78	83	81	81	81	85	82	74	63	69
31 0	63	76	78	83	81	81	81	85	81	74	62	70
31 15	63	75	78	82	81	80	80	85	79	73	62	71
31 30	63	75	78	80	83	79	82	83	79	73	60	72
31 45	61	76	77	80	82	79	83	81	79	72	62	71
32 0	61	76	77	80	81	79	82	81	79	72	63	71
32 15	61	76	77	79	81	79	81	80	79	71	63	71
32 30	61	76	76	79	81	79	81	80	79	71	63	71
32 45	62	75	76	79	79	79	79	81	78	71	64	69
33 0	62	75	76	79	79	79	80	80	78	70	65	70
33 15	62	74	77	77	80	79	79	80	76	72	62	71
33 30	63	73	77	77	80	79	79	81	75	71	63	70
33 45	61	75	75	77	80	77	80	78	77	71	62	70
34 0	61	75	75	77	80	78	80	78	77	69	62	70
34 15	62	74	75	78	78	79	78	79	76	69	63	68

NASA SEATS #18

CH 51.... WALL 3 IN. FROM FLOOR--AVG 12 TC'S
 CH 52.... WALL 3 FT. FROM FLOOR--AVG 12 TC'S
 CH 53.... WALL 6 FT. FROM FLOOR--AVG 12 TC'S
 CH 54.... STACK AVERAGE
 CH 55.... WALL 9 FT. FROM FLOOR (3 IN. FROM CEILING)
 CH 56.... CEILING-- 3 INCHES OUT FROM WALL

CH 57.... CEILING (QUAD; 3 FT. X 3 FT. FROM WALL)
 CH 58.... BAFFLE
 CH 59.... AIR UPPER LEVEL
 CH 60.... AIR LOWER LEVEL
 CH 61.... AMBIENT
 CH 62.... ANIMAL EXPOSURE CHAMBER

TEST DATE: 11/26/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATSB

TIME MIN SEC	C O D E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
0 15	41	44	43	46	44	42	44	44	46	45	41	42
0 30	42	44	42	47	42	44	42	45	45	47	41	44
0 45	41	45	41	48	42	44	42	45	46	45	41	42
1 0	41	44	43	46	43	43	44	45	48	45	41	42
1 15	43	44	43	48	43	43	44	44	48	47	40	42
1 30	43	43	44	70	43	44	46	57	56	50	41	43
1 45	43	46	45	127	45	50	48	103	101	57	41	43
2 0	44	48	49	173	49	56	50	138	137	65	41	43
2 15	46	50	54	199	54	60	54	157	160	70	41	43
2 30	46	52	57	209	56	65	55	167	171	80	40	45
2 45	47	54	61	215	59	67	58	173	180	86	41	44
3 0	48	56	62	237	60	72	59	191	192	94	41	44
3 15	49	59	65	250	63	75	61	205	208	101	42	44
3 30	50	60	69	253	67	76	64	210	215	106	41	45
3 45	50	63	70	256	69	79	66	213	219	113	43	43
4 0	52	65	72	257	71	83	67	216	222	121	42	45
4 15	53	67	75	261	74	83	70	217	226	128	41	45
4 30	54	68	77	262	75	85	72	220	229	136	42	46
4 45	54	71	78	265	77	87	74	220	232	141	42	45
5 0	54	72	79	266	77	90	74	222	233	149	42	46
5 15	56	74	82	265	81	90	76	222	233	153	41	47
5 30	56	75	84	262	82	92	78	222	234	157	42	47
5 45	56	78	84	264	82	95	78	221	233	163	42	48
6 0	57	80	86	263	84	96	81	219	233	168	43	48
6 15	59	81	88	259	86	98	81	220	231	172	42	49
6 30	59	85	88	252	87	99	83	216	230	178	42	49
6 45	60	86	90	243	89	98	84	209	228	179	42	49
7 0	60	88	89	235	88	99	83	204	221	179	42	49
7 15	59	88	90	225	89	99	84	196	214	175	43	49
7 30	60	88	91	215	89	99	84	190	206	172	41	52
7 45	60	87	91	205	89	98	84	183	198	166	42	51
8 0	58	89	89	197	88	98	84	176	189	159	42	50
8 15	59	87	90	187	88	97	83	169	182	153	40	53
8 30	58	87	88	180	86	97	83	163	175	150	42	51
8 45	58	86	88	172	87	95	83	158	168	147	42	51

NASA SEATS II B

TEST DATE: 11/26/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS8

TIME MIN SEC	C U B E				T E M P E R A T U R E S						AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH50		
9 0	57	87	87	156	87	94	83	152	153	141	42	51
9 15	57	86	86	160	86	94	82	150	157	136	41	51
9 30	57	85	85	154	85	92	83	145	153	131	43	51
9 45	57	84	84	150	84	92	82	141	150	129	42	52
10 0	57	83	85	146	84	91	81	138	143	126	42	52
10 15	57	83	83	142	83	91	81	134	140	122	42	52
10 30	56	81	83	137	83	90	80	131	135	120	41	53
10 45	55	82	82	134	83	89	81	127	133	115	42	51
11 0	56	80	82	130	82	88	80	125	129	114	41	52
11 15	55	80	81	127	82	87	80	122	127	109	43	51
11 30	55	79	80	124	81	87	79	120	123	109	41	52
11 45	55	80	79	122	80	86	80	117	121	106	42	52
12 0	55	79	79	119	80	85	80	115	121	104	42	52
12 15	55	78	79	117	79	86	79	115	116	103	42	52
12 30	55	78	79	115	79	83	79	112	116	102	41	52
12 45	55	77	78	114	78	85	78	113	113	102	42	53
13 0	56	76	78	112	78	83	78	110	112	102	41	54
13 15	55	76	77	111	78	83	77	110	109	100	42	53
13 30	54	75	78	109	78	82	78	108	109	98	42	53
13 45	54	76	75	109	76	83	76	107	109	97	42	53
14 0	55	74	76	108	77	82	76	106	106	98	41	54
14 15	54	75	76	107	77	81	78	104	108	95	41	53
14 30	55	74	75	106	76	81	76	104	105	96	41	54
14 45	54	75	73	107	76	80	76	103	105	94	42	53
15 0	54	74	75	106	76	79	76	102	105	93	42	53
15 15	53	75	73	106	75	79	76	103	104	93	43	51
15 30	54	74	74	105	76	79	76	102	105	93	42	53
15 45	54	74	73	105	74	79	75	104	103	93	42	52
16 0	55	73	73	105	74	79	75	103	103	95	41	54
16 15	54	74	72	107	73	80	75	105	105	94	42	53
16 30	54	74	72	109	74	79	74	106	106	95	43	53
16 45	54	74	71	111	73	79	74	107	108	96	42	53
17 0	55	73	73	111	74	79	75	107	109	99	41	54
17 15	54	74	72	113	75	79	75	108	111	99	42	53
17 30	54	74	73	115	75	79	75	109	113	101	42	53
17 45	54	75	72	117	74	79	75	112	113	103	43	51
18 0	54	75	71	120	74	79	75	113	114	105	43	53
18 15	56	72	73	119	74	79	75	114	114	108	41	54
18 30	54	75	71	120	74	79	75	114	115	106	43	52
18 45	55	72	73	119	74	79	74	114	114	108	41	54
19 0	55	72	73	117	74	79	75	113	114	106	42	54
19 15	54	72	74	116	74	79	74	113	113	106	41	54

NASA SEATS HB

TEST DATE: 11/26/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS8

TIME MIN SEC	C U B E				T E M P E R A T U R E S						AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
19 30	54	71	73	115	74	79	74	112	113	105	42	54
19 45	54	72	71	116	73	79	73	112	110	104	42	54
20 0	54	71	72	113	73	78	74	110	109	103	41	55
20 15	54	71	71	112	72	78	73	109	107	102	42	54
20 30	54	71	71	110	73	77	73	107	107	101	41	55
20 45	55	71	71	109	72	77	73	106	105	100	42	54
21 0	54	71	70	109	71	78	72	105	105	97	42	54
21 15	52	71	70	107	72	76	73	104	105	95	44	53
21 30	54	71	70	106	70	77	72	103	102	95	42	54
21 45	54	70	71	103	72	75	73	101	102	94	43	54
22 0	54	69	70	102	71	75	72	100	100	93	42	55
22 15	54	69	70	100	71	75	71	99	98	92	41	55
22 30	54	68	69	99	70	75	71	98	97	91	41	54
22 45	53	68	69	97	71	73	71	95	96	88	42	54
23 0	53	67	69	95	70	73	71	95	95	87	42	54
23 15	52	69	67	95	69	73	71	93	93	84	43	52
23 30	52	67	67	92	70	72	71	91	91	84	42	54
23 45	52	67	67	91	69	71	70	89	91	82	42	54
24 0	51	68	65	90	68	72	70	89	90	80	43	52
24 15	51	67	66	88	68	71	70	87	89	78	43	54
24 30	53	65	66	87	67	71	69	87	86	81	42	54
24 45	52	64	67	85	67	70	69	85	86	79	42	55
25 0	51	66	64	86	67	70	68	85	85	76	43	52
25 15	51	66	65	84	67	70	69	83	85	75	42	54
25 30	51	65	64	84	65	70	67	83	83	75	42	53
25 45	49	65	63	82	66	69	68	81	83	73	42	54
26 0	51	63	65	79	66	68	67	81	81	74	41	55
26 15	51	63	63	80	65	68	66	81	79	74	42	54
26 30	50	63	63	79	64	69	66	79	79	73	42	54
26 45	50	62	64	77	65	67	67	79	78	73	41	55
27 0	50	64	61	79	64	67	66	78	78	71	44	52
27 15	51	62	63	76	64	67	66	77	76	72	41	54
27 30	50	63	61	77	63	67	66	77	76	70	43	52
27 45	50	63	61	77	63	67	65	76	76	70	42	53
28 0	50	61	62	74	63	66	65	75	75	70	42	55
28 15	49	62	61	75	63	66	66	74	75	69	42	54
28 30	49	62	60	75	63	66	65	75	74	67	43	52
28 45	49	62	60	73	63	65	65	73	75	67	42	54
29 0	49	61	60	73	63	65	65	73	73	67	43	54
29 15	50	60	61	71	62	65	64	73	72	68	41	54
29 30	48	62	59	72	62	64	64	73	73	65	43	53
29 45	50	60	60	72	61	65	63	74	71	67	43	54

NASA SEATS HB

TEST DATE: 11/23/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATSB

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
30 0	49	61	59	71	62	64	64	72	73	65	42	53
30 15	48	61	58	71	62	63	63	72	72	64	43	53
30 30	48	61	58	71	61	64	63	71	71	64	44	53
30 45	49	59	59	71	60	64	62	71	69	66	43	53
31 0	49	59	58	70	59	64	62	71	69	65	43	53
31 15	49	59	58	69	62	62	63	69	69	64	43	54
31 30	49	59	58	69	59	64	62	71	68	64	43	53
31 45	49	60	57	70	60	63	62	70	68	63	44	51
32 0	49	58	58	67	60	62	62	69	68	64	42	54
32 15	49	58	59	67	60	62	62	69	68	64	43	54
32 30	48	58	58	68	60	61	62	68	67	63	43	54
32 45	49	58	58	68	58	63	61	69	67	63	43	53
33 0	48	58	58	67	60	60	62	68	67	63	43	53
33 15	49	57	58	66	59	61	61	68	67	63	42	54
33 30	49	57	57	67	58	61	60	69	65	63	43	53
33 45	49	58	56	67	58	61	60	67	66	62	44	51
34 0	49	57	57	67	58	61	60	68	64	63	43	53

NASA SEATS #9 A/A 'BASELINE' SEATS

CH 51.... WALL 6 IN. FROM FLOOR--AVG 12 TC'S
CH 52.... WALL 3 FT. FROM FLOOR--AVG 12 TC'S
CH 53.... WALL 6 FT. FROM FLOOR--AVG 12 TC'S
CH 54.... STACK AVERAGE
CH 55.... WALL 9 FT. FROM FLOOR (3 IN. FROM CEILING)
CH 56.... CEILING-- 3 INCHES OUT FROM WALL

CH 57.... CEILING (QUAD; 3 FT. X 3 FT. FROM WALL)
CH 58.... DAPPLE
CH 59.... AIR UPPER LEVEL
CH 60.... AIR LOWER LEVEL
CH 61.... AMBIENT
CH 62.... ANIMAL EXPOSURE CHAMBER

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS9

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
0 15	59	60	67	72	71	71	72	72	72	67	60	66
0 30	59	67	67	73	71	71	71	72	71	66	60	67
0 45	58	67	68	72	72	70	71	71	71	67	60	67
1 0	58	67	68	72	72	70	72	71	71	68	61	67
1 15	60	66	69	72	71	71	71	73	71	71	59	67
1 30	60	67	68	89	71	73	72	80	79	72	60	67
1 45	61	70	73	160	76	79	83	138	149	86	61	67
2 0	62	75	84	270	80	95	95	230	268	111	59	68
2 15	65	79	99	366	102	114	106	323	347	138	60	68
2 30	66	85	114	417	118	133	120	367	387	158	59	68
2 45	66	91	124	445	130	149	133	391	409	171	60	68
3 0	68	92	134	459	140	161	143	408	415	185	60	68
3 15	69	96	142	462	150	170	151	411	417	201	59	70
3 30	71	100	148	468	155	178	160	414	419	230	60	69
3 45	73	104	153	474	162	185	166	422	423	260	60	69
4 0	75	107	158	475	165	192	171	425	424	279	61	68
4 15	76	112	163	474	171	195	177	425	422	296	59	70
4 30	77	117	166	475	175	199	182	426	424	310	60	68
4 45	79	120	170	475	177	204	185	428	424	319	61	68
5 0	80	123	174	476	183	205	191	428	426	329	61	69
5 15	82	127	179	476	186	209	194	432	428	339	59	69
5 30	83	130	182	479	190	212	198	436	433	348	59	69
5 45	85	133	186	479	193	216	202	438	435	355	60	68
6 0	85	140	188	471	196	218	204	436	435	355	61	68
6 15	87	142	191	454	196	218	204	424	424	357	60	68
6 30	86	146	192	441	199	216	206	411	412	352	59	71
6 45	86	147	194	438	198	217	206	409	408	351	61	69
7 0	86	150	194	435	198	218	207	406	406	355	62	67
7 15	87	150	196	425	199	217	208	399	398	356	61	69
7 30	84	152	196	415	201	216	209	388	390	353	61	69
7 45	87	151	197	411	200	216	208	387	385	355	61	69
8 0	86	152	198	414	202	216	209	389	385	363	61	69
8 15	85	154	199	409	202	218	209	385	385	363	62	67
8 30	85	156	199	400	204	216	210	378	379	363	61	69

NASA SEATS #19
A/A 'BASELINE' SEATS

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS9

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
8 45	86	157	200	392	205	215	210	371	370	360	60	70
9 0	86	159	199	385	204	215	210	365	365	354	61	69
9 15	85	159	199	378	204	214	210	360	358	353	61	69
9 30	86	159	199	374	202	216	209	358	354	351	61	68
9 45	85	161	199	371	204	213	209	354	351	353	62	69
10 0	86	160	200	366	205	212	209	353	348	355	60	71
10 15	86	161	199	363	203	212	208	349	345	352	63	68
10 30	86	162	199	357	202	212	208	344	340	349	63	68
10 45	86	163	198	351	203	211	207	339	337	346	62	70
11 0	87	162	199	344	203	210	206	335	329	343	62	69
11 15	86	163	197	342	202	209	206	331	326	335	63	69
11 30	86	163	197	336	201	209	204	327	321	330	63	68
11 45	87	162	196	330	201	207	203	324	315	323	62	69
12 0	86	161	196	325	200	206	202	320	310	319	62	70
12 15	85	163	193	320	199	204	202	313	307	311	62	69
12 30	85	161	194	313	199	203	201	309	300	308	63	70
12 45	85	162	191	308	199	201	200	304	297	298	62	70
13 0	85	161	190	304	196	200	199	300	292	292	63	69
13 15	85	159	190	297	196	199	198	296	286	290	62	70
13 30	84	158	189	292	195	197	196	292	280	283	62	70
13 45	84	158	187	288	195	195	196	288	277	279	60	71
14 0	85	157	186	284	192	195	193	285	273	274	63	70
14 15	84	157	185	279	192	192	192	280	268	271	63	70
14 30	85	156	183	277	190	192	190	278	266	267	61	70
14 45	83	157	181	275	190	189	191	274	265	266	61	70
15 0	82	156	181	273	189	188	190	272	262	268	61	70
15 15	83	156	179	273	187	188	189	272	261	269	62	70
15 30	83	154	179	271	188	186	188	271	260	274	60	71
15 45	83	156	178	273	187	186	188	270	263	274	62	70
16 0	84	153	178	273	186	187	186	272	262	276	61	70
16 15	83	153	179	271	186	186	186	272	261	277	62	71
16 30	83	153	177	272	184	186	184	271	262	274	62	69
16 45	83	153	176	270	184	185	184	270	260	271	62	70
17 0	83	152	176	269	184	185	183	269	258	270	61	70
17 15	82	153	174	267	183	183	183	266	259	268	61	70
17 30	83	150	174	265	183	183	181	266	255	268	61	70
17 45	81	151	173	264	183	181	182	262	255	267	61	71
18 0	83	150	173	262	182	181	179	263	252	266	61	71
18 15	82	151	172	262	182	180	180	260	253	264	61	70
18 30	81	150	171	260	180	179	179	259	251	260	60	70
18 45	81	150	170	258	179	178	178	258	247	255	62	70

NASA SEATS 119
A/O 'BASELINE' SEATS

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: HSEATS9

TIME MIN SEC	CODE TEMPERATURES										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
19 0	81	140	171	253	179	177	176	255	242	252	60	70
19 15	81	140	169	249	179	175	176	252	240	247	59	71
19 30	79	140	167	246	170	174	175	247	238	240	60	70
19 45	81	145	167	242	176	173	173	246	233	236	60	71
20 0	80	146	165	238	176	171	173	242	230	232	60	72
20 15	80	143	165	235	174	171	170	240	226	228	60	71
20 30	79	144	163	232	173	170	169	236	225	223	61	69
20 45	79	143	162	227	173	167	168	233	220	219	60	71
21 0	79	143	160	224	172	166	167	229	219	212	61	71
21 15	79	140	160	219	170	165	165	227	212	210	61	71
21 30	78	141	158	216	170	163	165	222	210	205	61	71
21 45	79	138	157	212	168	163	162	221	206	201	61	71
22 0	78	138	155	209	166	161	161	216	204	196	63	69
22 15	79	136	155	205	166	160	160	213	199	192	61	71
22 30	78	137	153	202	166	157	160	209	198	189	61	71
22 45	78	135	153	197	164	157	158	207	194	187	60	71
23 0	78	134	151	196	162	157	156	205	192	183	62	69
23 15	78	133	150	192	160	156	155	202	189	179	62	69
23 30	76	134	150	189	161	153	155	198	187	176	61	71
23 45	78	132	150	187	159	153	152	197	184	173	61	70
24 0	78	131	149	184	160	150	152	193	181	171	61	72
24 15	77	130	148	181	158	150	150	192	177	168	62	71
24 30	77	129	147	178	157	150	150	189	176	167	61	71
24 45	76	130	145	176	157	149	150	185	175	163	61	70
25 0	76	129	143	175	155	149	149	184	174	159	61	71
25 15	76	128	143	173	154	147	148	182	170	159	63	70
25 30	77	126	144	171	154	147	147	181	168	162	61	71
25 45	76	127	142	173	154	145	147	179	170	162	61	71
26 0	77	126	142	173	153	145	146	181	170	165	60	71
26 15	76	125	142	173	152	145	145	182	171	166	60	70
26 30	77	124	140	174	151	146	143	182	171	164	61	71
26 45	76	126	139	175	151	144	144	180	173	163	60	71
27 0	75	125	139	174	150	143	143	179	171	165	61	71
27 15	77	123	138	175	150	143	142	183	172	170	61	71
27 30	76	124	137	176	150	142	142	182	172	173	61	70
27 45	76	124	138	176	150	141	142	183	173	183	58	72
28 0	76	124	137	178	149	141	141	183	175	184	60	71
28 15	76	124	137	178	148	141	140	182	175	190	61	70
28 30	76	123	137	175	149	140	140	183	173	189	60	71
28 45	77	122	136	176	148	140	138	183	172	188	60	71
29 0	77	123	136	174	148	139	138	181	172	186	60	71

NASA SEATS #9 A/A 'BASELINE' SEATS

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS9

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
29 15	77	122	136	173	147	139	137	180	171	186	61	71
29 30	75	123	134	174	147	138	137	178	172	187	60	71
29 45	76	124	133	174	146	137	137	178	173	183	61	71
30 0	75	123	133	173	146	137	137	177	170	183	61	71
30 15	76	123	133	173	144	137	135	177	169	177	62	70
30 30	76	123	132	171	143	136	135	176	168	174	61	71
30 45	76	123	132	169	144	135	135	173	166	172	60	71
31 0	77	121	132	166	143	134	133	173	164	170	59	71
31 15	76	121	131	166	141	135	132	172	163	164	60	70
31 30	75	121	130	164	142	133	133	168	161	162	60	71
31 45	77	120	129	163	140	133	131	169	160	159	60	70
32 0	75	120	129	160	140	131	131	165	158	157	60	70
32 15	76	118	128	159	139	131	129	166	155	154	60	70
32 30	76	119	127	157	139	130	129	163	154	153	59	70
32 45	76	118	127	155	138	129	128	162	153	151	60	70
33 0	76	117	126	155	137	129	127	161	152	150	60	69
33 15	75	118	125	153	137	128	127	157	151	148	60	69
33 30	75	116	125	151	137	127	126	158	150	148	60	69
33 45	76	116	125	150	136	127	126	157	150	146	61	69
34 0	75	115	124	150	135	126	125	155	147	144	62	69
34 15	75	116	122	150	134	125	125	153	149	140	62	69
34 30	75	114	122	149	132	126	123	153	147	140	62	68
34 45	75	113	122	146	133	124	123	151	144	140	61	69
35 0	75	113	122	145	133	123	123	150	143	139	61	69
35 15	75	114	119	146	131	123	122	150	145	134	61	69
35 30	75	111	120	143	131	123	120	150	141	134	61	69
35 45	74	112	118	143	130	122	120	148	140	131	62	68
36 0	74	110	119	140	130	121	120	148	137	131	60	69
36 15	73	111	117	140	129	120	120	144	138	130	61	69
36 30	75	109	117	138	128	120	118	145	136	129	60	68
36 45	74	108	117	136	128	119	117	144	133	128	60	68
37 0	74	109	115	137	127	118	118	142	135	125	60	68
37 15	73	109	115	135	127	116	117	140	133	128	60	70
37 30	73	107	115	134	127	116	117	140	133	127	59	70
37 45	73	109	113	135	125	116	116	139	133	127	61	68
38 0	74	106	115	134	125	116	115	140	131	131	61	68
38 15	74	107	113	135	125	115	116	140	133	136	60	70
38 30	73	108	113	136	124	115	115	140	135	135	61	68
38 45	73	107	113	137	122	116	113	141	134	134	62	67
39 0	73	107	113	137	122	116	113	141	134	133	62	66
39 15	72	107	112	135	123	114	114	139	133	132	61	68

NASA SEATS 09 A/C 'BASELINE' SEATS

TEST DATE: 11/24/80

PROJECT NUMBER: 01-5584-001

FILE: NSEATS9

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60			
39 30	74	105	113	134	122	114	112	140	131	131	61	68
39 45	73	106	111	135	121	114	112	139	132	128	63	67
40 0	73	105	111	133	120	114	111	138	130	127	61	67
40 15	73	104	112	131	121	113	111	137	128	127	61	68
40 30	73	104	109	131	120	113	110	136	128	123	60	67
40 45	72	105	108	130	120	112	111	134	129	120	61	67
41 0	72	102	109	128	119	111	110	134	124	121	61	67
41 15	71	104	108	128	119	110	110	131	126	118	60	67
41 30	71	103	107	126	119	109	109	130	124	116	61	67
41 45	72	101	108	124	117	109	108	130	121	116	61	67
42 0	71	101	107	123	118	108	108	128	121	114	60	68
42 15	71	102	106	123	117	108	108	126	121	112	61	67
42 30	71	100	105	122	115	108	106	126	120	110	62	66
42 45	71	100	105	120	117	106	107	125	118	110	60	68
43 0	71	100	103	120	115	107	106	124	119	108	60	67
43 15	72	98	104	118	114	106	105	124	115	108	60	67
43 30	71	98	104	116	114	106	105	122	114	109	60	67
43 45	70	99	102	116	113	105	105	120	115	105	60	67
44 0	71	99	102	116	113	105	105	120	115	104	60	67
44 15	72	96	102	115	112	105	103	120	113	104	60	67
44 30	70	97	101	114	111	104	103	118	112	102	60	67
44 45	71	95	102	113	111	104	102	118	109	102	59	67
45 0	70	95	102	111	110	103	101	117	108	102	59	67
45 15	70	96	99	112	110	102	102	115	111	100	59	67
45 30	70	94	101	109	109	102	101	115	107	102	60	67
45 45	70	95	99	109	110	101	102	113	108	101	59	67
46 0	70	94	99	109	110	100	101	113	107	100	58	69
46 15	70	94	98	108	107	102	99	113	107	98	61	66
46 30	70	93	99	106	108	101	99	113	106	100	60	67
46 45	69	94	97	108	106	100	99	112	106	96	61	66
47 0	70	92	97	106	106	100	98	112	105	97	60	67
47 15	69	92	97	105	107	98	99	110	104	97	58	68
47 30	69	93	95	106	106	99	98	109	106	95	59	67
47 45	70	91	96	104	105	99	96	110	102	95	60	67
48 0	69	90	97	103	106	98	97	109	101	96	60	67
48 15	68	92	94	104	104	98	97	108	103	93	59	67
48 30	69	90	96	102	105	98	96	108	100	95	60	67
48 45	69	89	95	101	104	97	96	107	100	95	60	67
49 0	69	90	94	103	103	97	95	107	101	92	62	66
49 15	68	90	94	101	102	98	95	106	100	92	61	65
49 30	70	89	94	101	102	97	95	106	99	92	59	67

PAGE 3

NASA SEATS II?
O/A 'BASELINE' SEATS

TEST DATE: 11/24/89

PROJECT NUMBER: 01-5584-001

FILE: NSEATS9

TIME MIN SEC	C U B E T E M P E R A T U R E S										AMBIENT	EXPOSURE CHAMBER
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		
49 45	67	90	93	100	103	95	95	104	99	93	60	67
50 0	69	88	93	100	102	96	94	106	98	91	60	67
50 15	68	88	94	98	102	95	94	104	97	93	60	67
50 30	68	88	92	99	100	96	92	104	98	91	61	65
50 45	68	87	92	98	102	95	93	103	97	92	59	67
51 0	68	88	91	99	100	95	92	103	98	90	61	65
51 15	67	87	91	97	102	93	93	102	97	91	59	68
51 30	67	89	90	98	100	94	93	101	98	89	59	67
51 45	67	87	91	97	102	92	93	101	96	91	58	68
52 0	66	87	90	97	100	92	92	100	96	89	60	67
52 15	67	86	90	95	99	92	91	101	95	91	58	67
52 30	67	87	89	96	99	92	92	99	96	89	59	67
52 45	67	86	88	97	98	92	91	100	95	88	61	66
53 0	66	87	88	95	98	91	91	98	95	88	60	67
53 15	67	85	89	95	99	91	91	99	94	88	59	68
53 30	68	85	88	95	97	92	89	99	93	88	60	66

NEELILOW

PAGE 1

TIME MIN SEC	C U B E T E M P E R A T U R E S										EXPOSURE	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60	CH61	CHAMBER
0 5	66	62	67	67	67	70	72	67	67	67	67	75
0 14	65	67	65	70	67	71	71	68	68	69	68	75
0 24	66	68	67	71	67	72	72	68	69	72	68	76
0 34	66	69	67	74	60	73	72	69	71	75	68	76
0 44	66	70	68	88	70	74	74	70	78	01	67	75
0 54	67	71	73	123	77	70	80	75	111	92	67	75
1 4	69	76	80	184	89	88	90	87	165	117	67	75
1 14	71	80	88	239	99	96	103	101	229	148	68	75
1 24	71	83	95	270	107	103	112	110	278	163	68	75
1 33	72	92	99	291	110	112	117	118	312	214	67	75
1 43	73	91	104	304	116	116	124	123	345	238	68	74
1 53	73	94	107	318	120	119	130	127	369	255	67	75
2 3	73	96	110	331	124	123	136	132	391	270	69	75
2 13	73	99	113	343	128	127	141	136	409	282	68	75
2 23	72	108	113	352	129	133	142	143	429	292	69	74
2 33	74	103	118	356	133	134	148	145	440	298	69	75
2 42	73	107	119	361	136	138	152	149	446	305	68	75
2 52	74	105	123	370	139	140	156	154	455	311	68	74
3 2	75	108	126	375	142	143	159	157	460	316	68	74
3 12	76	105	130	379	146	145	165	161	472	321	68	74
3 22	75	110	130	386	147	148	168	165	478	326	68	74
3 32	77	103	135	387	151	148	174	167	482	329	68	74
3 42	75	118	132	393	150	155	172	174	480	332	68	74
3 51	76	119	134	396	152	157	176	179	482	334	67	74
4 1	76	118	136	398	155	159	179	181	489	337	68	74
4 11	77	118	138	398	158	160	182	184	492	337	69	74
4 21	77	116	140	400	160	160	186	186	494	337	69	74
4 31	77	116	140	399	162	161	189	188	495	339	69	74
4 41	77	119	142	398	163	163	189	191	486	338	69	74
4 51	78	120	143	397	164	165	191	194	486	338	69	74
5 0	77	125	142	397	165	168	191	197	483	339	69	74
5 10	77	124	144	395	166	167	193	199	480	338	68	74
5 20	77	125	144	392	167	168	194	202	475	335	68	74
5 30	78	123	146	389	168	168	194	203	473	333	69	74
5 40	79	126	146	387	168	170	195	205	470	332	69	74
5 50	79	124	148	384	169	170	195	207	464	330	69	74
6 0	79	125	148	383	169	171	196	209	458	328	69	74
6 10	79	124	150	381	171	171	197	210	455	328	69	74
6 19	80	123	151	380	172	172	198	212	455	326	69	74
6 29	80	128	150	379	171	174	197	215	451	325	69	75
6 39	81	123	152	376	174	174	200	215	448	325	69	75
6 49	81	127	152	375	174	175	200	218	443	323	69	74
6 59	81	126	154	371	175	174	200	218	438	323	69	74
7 8	82	126	155	368	176	174	201	218	435	321	70	74
7 18	82	125	155	364	177	174	202	219	429	319	70	75
7 28	82	129	155	362	175	176	200	221	425	317	69	75
7 38	83	128	155	358	176	175	200	221	418	317	69	75
7 48	83	128	156	354	176	175	200	221	414	317	69	75
7 58	83	129	156	350	176	175	200	222	409	316	70	75

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TIME MIN SEC	CUBE TEMPERATURES										EXPOSURE	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60	CH61	CH62/CH
8 8	83	129	156	347	176	175	199	222	405	314	70	75
8 10	85	125	158	341	178	172	202	220	400	312	70	75
8 27	86	121	160	336	179	170	203	219	396	310	71	75
8 37	86	123	160	332	179	170	202	218	389	308	71	75
8 47	86	125	159	328	178	170	201	218	382	306	71	75
8 57	86	136	156	328	174	175	194	224	374	302	71	75
9 7	87	132	157	322	173	174	193	223	367	298	71	75
9 17	87	133	156	316	172	173	192	222	357	294	71	75
9 26	88	130	157	310	172	171	192	221	349	288	71	75
9 36	83	134	153	305	171	172	192	219	340	286	70	76
9 46	84	135	153	301	170	171	190	219	333	281	71	76
9 56	84	134	153	296	169	171	189	218	327	277	71	76
10 6	84	134	152	292	168	170	188	217	321	273	71	76
10 16	85	141	150	292	164	174	181	222	315	270	70	76
10 25	83	139	149	287	163	172	181	220	309	266	70	76
10 35	84	139	149	284	162	172	179	220	305	263	69	76
10 45	83	139	148	280	161	172	178	219	300	261	69	75
10 55	86	123	153	269	168	163	187	209	297	257	69	75
11 5	87	124	153	266	167	162	185	208	292	254	69	75
11 15	87	124	153	261	166	161	185	207	287	250	69	75
11 25	88	124	153	258	166	160	184	207	282	248	69	75
11 34	90	127	153	256	163	161	179	208	278	243	70	74
11 44	90	125	153	251	163	159	179	207	272	240	70	73
11 54	89	127	152	248	161	160	177	206	267	238	70	74
12 4	89	127	151	245	160	159	175	205	262	235	70	73
12 14	83	135	145	244	156	163	172	207	256	236	69	74
12 24	83	134	146	241	156	161	172	205	252	234	69	74
12 33	83	134	145	239	155	161	170	204	248	232	69	74
12 43	84	130	145	235	155	159	171	202	245	231	69	73
12 53	83	136	143	236	152	162	166	205	241	231	69	73
13 3	82	135	143	234	151	162	165	205	238	229	68	74
13 13	82	133	142	231	150	160	164	203	234	226	68	74
13 23	82	133	142	228	150	159	164	202	232	224	68	74
13 32	85	121	145	219	154	152	171	194	229	220	69	74
13 42	86	119	146	216	154	152	170	192	226	217	69	74
13 52	87	120	146	213	154	151	170	190	223	213	70	74
14 2	86	120	145	210	153	150	169	189	220	210	70	74
14 12	88	126	144	211	151	153	162	194	218	206	71	73
14 21	88	125	144	208	150	153	161	193	215	203	71	73
14 31	89	120	146	205	151	150	162	191	213	200	71	73
14 41	90	122	145	203	150	151	161	190	210	198	72	74
14 51	84	127	139	202	148	151	160	189	207	197	72	75
15 1	83	127	138	200	147	151	159	188	204	195	71	75
15 11	84	125	139	197	147	150	159	187	202	193	71	75
15 20	84	125	138	195	146	149	158	186	199	190	70	76
15 30	83	128	136	195	145	150	154	187	197	188	70	76
15 40	85	122	138	191	145	148	155	185	195	185	70	76
15 50	84	123	136	190	145	148	154	184	193	183	70	76
16 0	83	126	135	189	143	149	152	185	190	181	70	76

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TIME HTN SEC	CUBE TEMPERATURES										EXPOSURE	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60	CH61	CHANNER
16 10	80	112	141	102	147	143	158	177	189	178	72	75
16 20	87	113	139	179	147	142	158	176	186	177	72	75
16 29	80	113	140	178	147	142	156	176	185	174	72	75
16 39	86	113	139	176	147	141	157	174	182	173	71	76
16 49	89	120	138	178	143	144	151	178	180	170	72	75
16 59	88	118	137	176	142	144	150	178	178	169	72	75
17 9	88	119	136	175	141	144	149	177	176	167	71	75
17 18	88	119	136	173	140	144	148	176	174	165	71	75
17 28	83	123	131	173	138	144	148	176	172	165	70	75
17 38	83	124	130	172	138	144	146	176	170	163	70	75
17 48	82	123	130	171	137	144	146	175	168	162	71	75
17 58	82	124	128	170	136	144	145	174	167	160	70	75
18 8	83	124	127	170	134	145	143	176	165	159	70	75
18 17	83	121	128	168	135	143	143	174	164	157	70	75
18 27	83	122	127	167	134	143	143	174	163	155	71	75
18 37	83	120	127	165	134	142	143	172	162	154	70	75
18 47	86	107	132	159	138	136	148	165	161	151	71	75
18 56	85	108	132	157	138	135	148	164	160	151	71	75
19 6	86	110	131	157	137	135	147	164	159	149	72	74
19 16	86	111	131	156	137	135	146	164	158	149	71	74
19 26	87	116	129	158	133	138	141	167	156	148	71	74
19 36	86	115	129	156	133	137	141	166	156	147	72	74
19 46	85	115	128	155	133	137	141	165	154	147	71	74
19 55	86	115	127	154	132	137	139	165	153	146	71	73
20 5	82	116	124	154	131	136	140	163	151	146	70	74
20 15	83	115	125	153	131	136	140	162	151	145	70	74
20 25	84	112	126	152	131	135	140	161	150	144	70	74
20 34	84	113	125	152	131	134	139	161	150	143	70	74
20 44	84	113	124	151	130	135	138	161	150	142	70	75
20 54	84	113	124	151	130	135	138	161	150	141	71	75
21 3	83	117	122	151	128	135	135	161	148	141	71	75

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TIME MIN SEC	CUBE TEMPERATURES										EXPOSURE CHAMBER	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		CH61
0 15	72	70	76	76	77	78	80	80	75	75	71	72
0 30	72	74	76	79	77	80	79	81	76	78	70	72
0 45	71	79	73	84	76	81	78	83	79	81	70	72
1 0	73	80	82	139	89	89	91	92	126	98	71	72
1 15	75	87	96	244	111	111	116	117	240	122	71	72
1 30	77	84	109	305	126	124	138	131	320	149	71	71
1 45	77	90	116	346	138	134	154	144	374	181	70	72
2 0	78	98	123	382	147	144	166	156	422	218	70	72
2 15	81	92	134	411	157	151	181	167	464	259	70	72
2 30	83	100	142	437	166	159	194	180	501	301	70	71
2 45	83	122	140	462	171	176	199	196	520	335	70	72
3 0	86	120	150	476	180	181	211	206	548	359	70	72
3 15	83	130	150	495	185	189	220	217	580	381	69	72
3 30	85	124	155	503	193	193	231	225	600	399	70	72
3 45	88	120	166	510	202	195	243	230	602	413	70	71
4 0	89	122	171	519	209	199	252	238	602	429	70	72
4 15	95	122	180	514	215	203	256	244	590	434	72	71
4 30	96	134	179	509	215	210	255	253	576	439	72	71
4 45	91	136	177	498	218	209	258	257	556	441	71	73
5 0	95	125	183	475	220	206	259	256	533	432	72	72
5 15	96	140	179	459	213	211	248	264	504	421	73	71
5 30	91	151	173	446	206	213	238	269	483	418	72	72
5 45	98	124	184	421	214	200	247	258	471	416	73	72
6 0	95	146	176	419	206	207	235	266	470	423	72	72
6 15	90	146	174	416	207	205	236	265	477	429	70	73
6 30	91	142	176	411	208	203	239	263	475	436	71	73
6 45	96	144	177	412	207	207	234	268	479	448	72	72
7 0	89	155	173	414	205	210	233	271	480	459	71	73
7 15	93	139	180	404	212	203	242	264	477	465	72	73
7 30	99	134	185	396	213	202	240	264	466	465	73	72
7 45	98	145	182	393	210	206	235	268	455	469	72	72
8 0	93	155	178	386	206	208	231	270	437	467	71	72
8 15	96	143	181	373	209	202	236	264	425	463	71	72
8 30	97	148	180	367	207	204	231	266	415	461	72	72
8 45	94	150	179	362	206	203	231	264	406	461	70	73
9 0	95	148	180	355	207	201	232	262	398	458	70	72
9 15	99	139	184	348	209	197	234	258	392	455	70	72
9 30	97	153	180	352	204	203	225	265	387	452	70	72
9 45	100	141	183	346	207	199	230	260	384	448	71	73
10 0	100	145	183	343	206	200	227	261	379	443	71	73
10 15	100	150	182	341	203	201	224	263	372	442	72	73
10 30	97	158	178	338	201	202	220	264	364	441	72	73
10 45	100	147	180	330	202	200	221	261	357	437	72	73
11 0	100	150	180	326	200	200	220	261	350	433	72	73
11 15	97	156	177	323	198	200	218	260	344	431	72	73
11 30	101	144	180	317	201	196	220	256	340	428	72	73
11 45	100	145	181	318	201	195	220	256	336	430	72	73
12 0	101	148	181	329	201	197	220	262	335	434	73	73
12 15	100	157	180	344	200	201	220	269	339	432	73	73

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TIME MIN SEC	CUBE TEMPERATURES										EXPOSURE	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60	CH61	CHAMBER
12 30	101	153	183	361	205	202	226	274	347	492	73	72
12 45	105	151	186	379	208	205	228	282	358	513	73	71
13 0	102	162	186	387	209	210	231	286	368	513	72	73
13 15	106	151	192	390	215	209	237	286	377	500	73	73
13 30	108	156	194	395	216	213	239	290	380	498	72	72
13 45	105	165	192	397	215	215	239	292	383	488	71	73
14 0	105	167	192	393	215	217	237	293	381	475	72	73
14 15	107	159	194	385	216	215	239	291	377	462	73	73
14 30	109	165	194	380	214	217	236	293	371	445	73	73
14 45	108	160	195	373	216	214	238	289	366	430	73	73
15 0	111	158	195	366	215	214	236	289	360	418	71	73
15 15	111	158	196	360	215	213	236	287	354	403	73	73
15 30	108	171	192	358	212	215	232	289	349	391	73	73
15 45	109	168	190	354	210	214	231	290	344	380	72	73
16 0	108	164	191	346	211	212	232	286	338	369	73	74
16 15	113	153	193	336	211	209	232	283	332	356	73	73
16 30	112	161	191	331	208	209	227	283	325	345	75	73
16 45	109	163	189	323	206	207	227	279	318	336	73	73
17 0	112	155	190	314	206	204	226	277	311	325	74	73
17 15	112	163	186	311	202	205	220	278	305	319	72	73
17 30	111	166	184	306	199	205	217	277	299	312	71	73
17 45	112	154	187	298	201	200	220	271	295	307	72	73
18 0	112	158	185	299	199	201	216	273	292	309	72	72
18 15	110	165	182	300	196	202	214	274	290	313	71	73
18 30	109	160	182	297	197	200	216	271	289	315	72	73
18 45	112	154	184	293	198	198	216	269	288	313	73	73
19 0	112	154	184	293	197	198	215	269	286	311	73	73
19 15	111	159	182	292	196	198	213	270	284	310	72	73
19 30	109	165	180	291	194	199	211	271	282	311	73	74
19 45	112	160	180	289	194	198	210	270	281	311	75	73
20 0	109	164	179	289	192	198	209	269	280	311	74	73
20 15	107	165	176	288	190	199	208	269	279	314	73	73
20 30	106	159	176	287	191	198	209	267	279	315	74	73
20 45	114	155	179	285	192	197	208	268	279	314	74	73
21 0	107	166	175	286	189	198	206	268	277	315	74	73
21 15	106	162	175	284	189	197	206	268	276	315	73	74
21 30	108	150	178	281	192	195	211	263	277	316	73	73
21 45	110	168	175	288	188	199	203	270	278	316	73	73
22 0	109	170	174	291	187	201	202	272	279	318	72	73
22 15	108	154	178	288	192	197	210	265	280	319	73	73
22 30	114	141	183	285	197	194	215	261	281	316	72	74
22 45	110	173	175	293	189	202	203	272	281	314	73	73
23 0	106	154	174	290	189	200	206	269	279	313	72	74
23 15	113	140	182	281	196	193	214	260	279	300	72	73
23 30	117	141	185	277	197	191	213	258	277	304	72	73
23 45	117	151	182	278	194	193	209	261	275	301	74	72
24 0	114	163	178	280	189	195	203	266	273	299	72	72
24 15	107	172	172	282	185	197	199	269	270	299	71	72
24 30	109	150	176	274	190	192	207	261	269	295	72	73

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TIME	MIN	SEC	C U B E										T E M P E R A T U R E S					EXPOSURE	
			CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60	CH61	CH62	CH63	CH64	CH65	CH66	CH67
24 45	111	168	172	172	172	278	185	196	198	267	267	291	73	72					
25 0	106	165	170	170	170	276	183	196	198	265	266	290	71	74					
25 15	109	147	174	174	174	268	188	190	204	258	264	294	74	73					
25 30	116	139	179	179	179	261	190	187	206	254	262	276	76	73					
25 45	106	167	168	168	168	267	181	193	195	262	257	272	74	73					
26 0	110	145	173	173	173	256	186	187	202	253	254	263	74	73					
26 15	116	139	177	177	177	249	188	183	202	250	252	253	76	72					
26 30	115	153	173	173	173	249	183	185	194	254	248	247	75	72					
26 45	112	139	174	174	174	241	184	181	199	246	243	243	73	72					
27 0	115	138	175	175	175	236	185	179	198	244	240	236	74	72					
27 15	114	154	169	169	169	238	179	182	189	249	236	231	74	72					
27 30	107	157	164	164	164	236	175	182	187	249	231	229	72	73					
27 45	107	148	164	164	164	231	175	180	187	245	228	224	72	72					
28 0	111	137	167	167	167	224	177	176	189	240	225	219	72	72					
28 15	112	133	169	169	169	219	178	173	191	236	223	215	73	72					
28 30	113	148	165	165	165	221	174	176	183	241	220	212	74	72					
28 45	107	141	163	163	163	217	173	174	185	236	217	210	73	72					
29 0	112	135	165	165	165	213	174	171	185	234	215	205	72	72					
29 15	112	146	162	162	162	213	170	173	180	237	213	203	73	72					
29 30	106	153	156	156	156	214	166	175	176	238	209	202	72	72					
29 45	111	139	161	161	161	208	169	170	178	233	208	197	74	71					
30 0	107	146	157	157	157	208	166	171	175	234	205	196	73	72					
30 15	107	143	156	156	156	205	165	170	175	232	203	194	73	72					
30 30	105	140	155	155	155	203	165	169	175	230	201	191	73	73					
30 45	108	145	154	154	154	202	162	170	171	231	199	189	73	73					
31 0	106	135	155	155	155	197	164	166	174	226	197	187	74	73					
31 15	106	146	152	152	152	199	159	169	167	229	195	186	74	73					
31 30	108	134	155	155	155	194	162	165	171	225	193	183	75	73					
31 45	106	144	152	152	152	195	158	166	165	227	191	182	74	74					
32 0	109	135	153	153	153	189	160	163	168	222	190	179	73	73					
32 15	108	130	154	154	154	186	161	160	169	218	188	178	73	74					
32 30	107	129	154	154	154	184	160	159	169	216	186	176	74	74					
32 45	104	138	150	150	150	185	157	161	164	219	184	175	74	74					
33 0	105	133	150	150	150	182	157	159	165	216	183	174	74	74					
33 15	104	136	148	148	148	182	155	160	162	216	181	172	73	74					
33 30	105	133	148	148	148	179	155	158	161	215	179	170	72	74					
33 45	105	130	149	149	149	177	154	157	161	212	178	168	72	74					
34 0	105	138	146	146	146	179	152	159	156	215	176	167	72	74					
34 15	105	134	146	146	146	176	152	157	157	212	175	165	72	74					
34 30	105	125	148	148	148	171	153	153	159	207	173	163	73	74					
34 45	103	134	145	145	145	173	150	155	155	210	171	162	72	74					
35 0	102	131	143	143	143	171	150	154	155	208	169	161	71	74					
35 15	101	131	143	143	143	170	149	153	155	206	168	159	71	74					
35 30	104	124	145	145	145	166	150	151	155	204	167	156	74	74					
35 45	103	129	143	143	143	167	148	151	152	205	165	156	73	74					
36 0	103	127	143	143	143	163	148	151	152	203	164	154	72	74					
36 15	101	125	141	141	141	163	147	150	152	201	163	153	72	74					
36 30	102	126	141	141	141	162	147	150	152	201	161	151	72	73					

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TIME MIN SEC	CUBE TEMPERATURES											EXPOSURE CHAMBER
CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60	CH61		
0 15	61	53	61	58	59	55	60	57	60	61	58	59
0 30	61	56	61	60	60	56	61	58	61	64	58	59
0 45	62	58	58	68	57	62	59	60	65	66	59	59
1 0	63	59	65	100	66	67	67	68	93	76	59	59
1 15	64	69	79	169	89	80	92	85	179	92	59	59
1 30	65	75	96	245	110	106	117	108	271	111	59	60
1 45	68	76	112	311	129	124	140	128	354	134	60	60
2 0	69	83	118	352	137	137	150	143	397	155	59	60
2 15	70	89	120	371	142	145	158	154	416	179	59	60
2 30	73	86	126	375	147	149	161	164	418	205	59	60
2 45	73	94	127	378	150	151	168	168	416	229	59	60
3 0	75	98	128	381	151	154	169	176	418	251	59	60
3 15	77	97	134	386	156	156	174	182	425	275	59	60
3 30	76	102	136	394	160	157	181	187	433	295	59	61
3 45	77	108	138	401	163	161	185	193	440	311	59	62
4 0	78	110	139	409	166	164	188	201	450	326	59	62
4 15	79	111	143	415	170	169	191	208	463	340	59	62
4 30	81	112	146	419	174	172	195	215	470	349	60	62
4 45	81	118	148	424	176	175	199	219	474	361	60	63
5 0	82	119	150	427	180	178	202	225	480	371	60	63
5 15	82	119	152	422	182	179	206	227	472	373	59	63
5 30	81	122	153	412	181	178	206	228	456	368	59	64
5 46	83	121	153	398	181	178	202	230	440	361	59	64
6 1	81	122	153	387	179	175	201	229	424	355	59	65
6 16	82	123	152	375	178	174	199	229	409	347	59	64
6 31	82	124	151	366	176	175	195	230	395	342	59	64
6 46	82	121	152	356	176	171	195	228	384	330	60	65
7 1	82	123	151	348	174	171	193	228	374	334	59	65
7 16	83	123	150	343	173	172	190	229	372	333	59	64
7 31	83	122	152	339	174	171	191	228	375	339	60	65
7 46	84	121	153	336	175	170	191	228	380	346	60	65
8 1	82	124	153	337	174	169	193	227	391	352	60	65
8 16	82	127	152	341	172	171	190	230	405	361	60	65
8 31	84	125	153	342	175	172	191	231	419	369	60	65
8 46	83	127	154	339	175	171	192	230	413	370	59	65
9 1	84	127	153	336	173	172	190	232	412	368	59	65
9 16	85	124	155	334	175	172	192	232	414	371	59	66
9 31	85	125	157	337	176	171	195	232	437	379	59	66
9 46	86	128	156	344	176	174	194	234	455	389	59	65
10 1	87	125	159	342	178	174	196	235	453	398	59	65
10 16	86	129	158	338	177	174	196	235	436	401	59	66
10 31	85	133	155	333	175	174	194	234	419	399	60	66
10 46	87	126	159	323	177	172	194	233	405	400	59	66
11 1	86	130	158	317	175	172	192	231	390	397	59	66
11 16	86	132	154	311	172	173	188	232	377	391	60	66
11 31	87	129	156	303	172	170	188	230	367	384	60	66
11 47	87	128	156	297	171	170	186	229	357	380	60	67
12 2	87	128	156	291	171	167	186	226	349	375	60	67
12 17	86	131	154	287	169	157	185	225	341	371	60	67

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PAGE 2

TIME MIN SEC	C U B E T E M P E R A T U R E S										EXPOSURE CHAMBER	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		CH61
12 32	87	131	153	204	167	168	182	225	335	369	60	67
12 47	87	130	153	200	168	165	183	222	330	370	60	67
13 2	86	133	151	278	166	166	181	221	325	375	60	67
13 17	88	131	152	274	165	167	179	222	319	379	60	67
13 32	89	126	153	269	166	165	179	221	312	377	60	67
13 47	87	133	151	268	163	166	177	220	306	367	60	67
14 2	88	127	152	262	164	164	176	219	298	359	60	67
14 17	89	122	154	255	165	160	178	216	292	357	60	67
14 32	87	128	151	253	163	160	176	214	286	352	60	67
14 47	89	124	151	250	161	161	172	215	282	358	60	67
15 2	88	126	152	247	162	157	176	211	278	360	60	68
15 17	86	132	148	248	160	158	173	211	274	354	60	68
15 32	88	130	148	248	159	160	170	213	270	360	60	68
15 47	89	127	149	248	159	159	170	213	268	367	60	67
16 2	88	126	150	248	160	159	171	212	265	361	60	67
16 17	87	129	149	250	159	158	172	211	263	357	60	68
16 32	87	130	147	250	159	159	171	212	261	352	60	68
16 47	88	125	149	250	160	157	172	212	260	350	60	68
17 2	88	129	148	254	159	158	171	213	259	351	60	68
17 17	87	132	146	258	156	161	168	216	259	350	60	67
17 32	90	123	149	258	158	160	169	218	258	355	60	68
17 47	87	132	146	262	157	159	170	217	259	357	60	68
18 2	89	128	147	265	158	162	168	222	260	359	60	68
18 17	90	123	151	264	160	159	171	220	261	363	60	67
18 32	88	129	150	267	161	157	174	218	262	363	60	68
18 47	92	121	152	269	161	161	171	225	264	368	61	68
19 2	91	125	152	273	163	159	175	224	267	376	60	68
19 17	87	137	149	282	161	162	175	226	272	383	61	69
19 32	90	133	149	288	160	167	172	234	275	388	61	68
19 47	92	127	151	292	162	167	173	237	278	393	61	68
20 3	93	124	155	295	166	166	178	239	282	397	60	68
20 18	91	129	155	300	168	165	182	238	285	396	60	69
20 33	89	138	151	308	165	169	180	244	288	392	61	68
20 48	90	130	157	311	172	166	186	245	292	390	60	69
21 3	88	139	154	317	170	170	185	249	295	385	61	69
21 18	90	137	154	322	170	173	184	255	298	381	61	69
21 33	93	127	158	323	172	175	185	261	300	379	61	69
21 48	89	140	154	326	171	175	186	258	300	375	61	69
22 3	92	133	157	322	171	177	185	260	300	371	61	69
22 18	94	124	161	316	175	173	189	258	298	368	60	69
22 33	92	132	160	316	175	172	190	257	296	362	60	70
22 48	95	126	161	312	174	175	186	261	294	356	61	69
23 3	93	130	161	309	175	172	190	256	292	350	60	70
23 18	90	140	156	309	172	173	188	256	290	341	61	70
23 33	93	134	156	305	170	176	183	260	286	333	60	69
23 48	94	128	158	300	170	175	182	260	283	327	61	69
24 3	95	125	160	293	173	170	187	253	279	321	60	69
24 18	91	136	156	291	170	169	186	250	276	314	61	69
24 33	91	135	154	287	168	171	182	252	272	306	61	69

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TIME MIN SEC	C U B E										T E M P E R A T U R E S				E X P O S U R E	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60	CH61					CHAPER
24 48	91	132	156	279	170	166	185	246	268	302	60					69
25 3	90	136	154	276	167	167	182	245	264	295	61					69
25 18	92	131	153	272	164	169	176	249	259	289	61					68
25 33	95	123	156	266	166	166	177	246	255	285	61					68
25 48	91	135	152	265	163	167	175	244	252	279	60					68
26 3	93	128	153	261	163	165	175	244	249	276	61					68
26 18	93	126	154	255	164	162	176	240	245	272	60					68
26 33	90	135	151	254	162	161	175	237	243	267	61					68
26 49	95	123	152	249	161	162	172	240	239	262	61					68
27 4	92	129	152	246	161	159	174	235	236	258	61					68
27 19	90	134	149	244	159	160	171	234	233	251	61					68
27 34	92	130	148	241	156	162	166	236	230	245	61					67
27 49	93	123	149	235	157	159	167	233	227	241	61					67
28 4	93	122	150	229	158	156	169	229	224	236	61					68
28 19	90	131	147	228	156	156	167	227	221	230	61					67
28 34	90	130	145	226	153	158	163	228	218	226	61					67
28 49	93	120	148	219	157	153	166	224	215	223	61					68
29 4	90	129	144	220	154	154	163	223	213	218	62					67
29 19	92	123	144	218	153	155	160	225	211	214	62					67
29 34	93	120	146	215	153	154	161	224	210	212	61					67
29 49	90	126	143	216	152	153	161	220	208	209	61					67
30 4	92	119	145	214	151	153	159	222	207	207	61					67
30 19	92	117	145	211	152	153	159	220	206	205	61					67
30 34	89	128	142	211	151	152	159	217	205	201	61					67
30 49	92	118	144	208	150	151	158	217	203	200	61					67
31 4	91	121	143	206	150	150	159	215	201	198	61					67
31 19	89	125	140	206	150	150	158	213	200	195	61					67
31 34	90	123	139	205	147	150	155	214	198	192	62					67
31 49	91	116	140	202	147	150	154	215	197	190	62					67
32 4	91	116	141	200	147	149	154	213	195	188	62					67
32 19	90	116	141	198	148	147	156	211	194	185	61					67
32 34	88	124	137	200	146	147	154	210	193	182	61					67
32 49	93	108	142	195	147	146	154	211	192	182	60					66
33 4	90	117	139	195	146	146	154	208	190	179	61					67
33 19	88	124	135	197	142	147	151	209	189	177	61					67
33 34	89	117	135	195	142	148	149	210	180	176	61					67
33 49	87	122	134	194	142	146	151	206	180	175	61					67
34 4	88	119	133	193	139	147	147	208	186	173	61					66
34 20	90	110	136	189	141	145	147	207	184	172	61					67
34 35	90	112	136	186	142	142	149	203	183	171	61					67
34 50	90	113	134	186	139	145	145	206	181	169	61					67
35 5	91	107	135	183	140	142	145	204	179	168	61					67
35 20	88	119	131	183	138	141	146	200	178	165	61					67
35 35	88	115	131	182	136	142	144	201	177	164	61					67
35 50	88	113	130	180	136	141	143	201	175	163	61					67
36 5	90	108	133	176	137	139	144	199	173	162	60					67
36 20	89	109	132	175	136	138	144	197	172	160	60					67
36 35	86	117	127	176	133	139	141	196	171	157	61					67
36 50	90	104	131	171	136	136	143	195	169	157	61					67

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TIME	C U B E T E M P E R A T U R E S											EXTENSURE	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60	CH61	CH61	CH61
37 5	86	115	128	172	134	136	142	192	168	154	61	67	67
37 20	86	115	126	172	131	138	130	194	166	153	61	66	66
37 35	89	107	127	169	131	137	137	195	165	152	61	66	66
37 50	86	111	126	167	131	135	138	190	163	150	61	66	66
38 5	86	111	124	166	129	135	136	191	162	149	61	67	67
38 20	89	102	127	163	129	135	134	192	160	148	61	66	66
38 35	88	104	127	160	130	132	136	188	159	148	60	67	67
38 50	86	110	123	162	127	134	133	188	157	145	61	66	66
39 5	88	101	125	158	128	132	133	187	155	145	61	66	66
39 20	87	106	124	156	129	130	135	183	154	143	61	67	67
39 35	85	110	122	157	127	131	133	183	153	141	61	67	67
39 50	86	105	121	155	125	131	130	184	151	139	62	67	67
40 5	88	97	123	153	124	132	126	187	150	138	60	67	67
40 20	89	97	125	149	129	126	134	178	150	130	60	67	67
40 35	85	107	121	150	126	127	131	177	149	136	61	66	66
40 50	87	102	121	149	125	127	129	179	148	134	61	67	67
41 5	85	105	120	148	124	126	128	177	147	133	61	67	67
41 20	84	107	118	148	122	127	127	176	146	131	61	66	66
41 35	84	107	116	148	119	127	124	178	145	130	61	66	66
41 50	84	102	118	145	122	124	127	173	143	129	61	66	66
42 5	81	113	113	147	119	125	124	173	143	127	62	66	66
42 20	83	103	115	145	118	125	122	175	142	126	61	66	66
42 35	84	99	117	142	120	123	124	172	140	126	61	66	66
42 50	83	101	114	142	118	124	121	173	139	124	62	66	66
43 5	85	97	116	140	119	123	122	171	139	124	61	66	66
43 20	84	100	116	139	118	121	123	169	138	124	61	66	66
43 35	83	102	114	139	118	120	123	167	137	123	61	66	66
43 50	82	104	113	139	117	121	121	167	136	122	61	66	66
44 5	82	103	111	139	115	121	119	169	135	121	61	66	66
44 20	84	96	114	137	116	120	118	168	134	121	61	66	66
44 35	83	98	113	135	117	118	120	165	134	120	61	67	67
44 50	83	98	112	136	114	120	117	167	133	120	61	66	66
45 5	84	94	113	134	115	118	118	165	132	120	61	66	66
45 20	82	101	111	134	115	116	120	161	132	119	61	66	66
45 35	78	109	106	137	111	119	115	164	131	117	62	66	66
45 50	83	91	112	130	116	115	119	161	130	118	61	66	66
46 5	81	101	109	133	113	116	117	160	130	117	61	66	66
46 20	79	104	106	135	109	118	112	163	129	115	62	66	66
46 35	82	93	109	131	111	117	113	163	128	116	62	66	66
46 50	79	102	106	131	111	115	115	159	127	114	62	66	66
47 5	79	100	105	131	109	117	111	160	127	114	62	66	66
47 20	82	93	103	128	111	115	113	159	125	114	61	66	66
47 35	82	97	107	126	112	112	116	155	125	114	61	66	66
47 50	80	97	101	127	111	112	109	157	124	111	62	66	66
48 6	77	105	101	131	106	115	109	157	124	111	62	66	66
48 21	80	95	104	127	107	115	108	150	123	111	62	66	66
48 36	83	87	109	123	111	111	113	155	122	110	61	66	66
48 51	79	90	103	127	105	114	108	157	122	110	61	66	66
49 6	81	90	105	124	107	112	108	156	120	110	61	66	66

NEIL SLOW

PAGE 5

TIME MIN SEC	C U B E T E M P E R A T U R E S										E X P O S U R E	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60	CH61	CHAMBER
49 21	82	80	108	120	112	107	116	149	120	111	61	66
49 36	75	108	99	127	104	112	108	152	120	107	62	66
49 51	82	87	106	120	108	109	110	152	118	109	61	66
50 6	77	103	101	123	107	100	111	148	118	107	62	66
50 21	75	103	97	126	101	113	103	154	118	105	62	66
50 36	80	88	102	121	103	112	103	154	116	106	62	66
50 51	75	103	96	124	101	111	105	150	117	104	62	66
51 6	76	97	97	124	100	113	101	153	116	103	62	65
51 21	83	77	106	114	107	107	108	149	114	106	61	66
51 36	81	86	105	114	108	104	111	145	114	105	61	67
51 51	77	99	101	118	106	104	110	143	114	103	62	66
52 6	76	99	96	121	100	110	100	151	113	101	63	66
52 21	78	90	90	118	100	110	100	151	112	102	63	65
52 36	84	76	105	112	107	104	107	147	111	104	61	66
52 51	76	99	95	120	97	111	98	151	112	100	63	65
53 6	83	78	104	111	106	103	107	144	111	103	61	66
53 21	81	84	104	110	107	101	110	140	111	102	61	66
53 36	74	105	94	118	99	106	102	144	111	98	62	66
53 51	83	76	104	109	105	102	105	144	109	102	61	66
54 6	76	99	98	113	103	101	107	138	110	99	62	66
54 21	74	101	94	115	100	103	103	141	109	98	62	66
54 36	76	93	94	115	97	106	98	146	108	98	62	66
54 51	76	91	97	111	102	101	105	138	108	99	62	66
55 6	74	97	93	114	98	104	100	141	107	97	63	66
55 21	78	85	96	112	98	105	96	146	106	98	62	66
55 36	81	79	101	106	105	98	107	136	106	99	61	67
55 51	79	88	100	107	104	97	107	134	106	97	61	67
56 6	72	103	91	114	96	103	98	140	106	94	62	66
56 21	77	87	93	112	94	105	93	146	105	96	61	65
56 36	83	72	101	104	102	98	102	138	104	98	61	66
56 51	73	100	89	114	93	105	94	142	105	93	62	65
57 6	79	78	95	108	95	103	94	144	104	95	61	66
57 21	81	77	100	103	102	97	104	133	103	96	61	66
57 36	74	96	93	108	98	98	101	132	103	94	62	66
57 51	82	71	100	102	101	97	101	136	102	97	61	66
58 6	80	81	99	102	102	95	104	130	102	95	61	67
58 21	73	100	90	109	95	99	97	134	103	92	62	66
58 36	73	95	88	111	91	102	92	140	102	92	62	65
58 51	74	90	92	105	98	95	102	129	102	93	62	66
59 7	70	100	85	110	91	101	93	135	102	91	63	66
59 22	78	76	92	105	93	101	91	140	100	93	62	66

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PAGE 1

TIME MIN SEC	CUBE TEMPERATURES										EXPOSURE CHAMBER	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		CH61
0 15	64	85	62	79	66	80	69	78	73	71	70	77
0 45	66	71	67	83	71	76	74	76	76	77	70	78
1 0	66	74	69	104	76	82	79	80	95	82	71	77
1 15	70	63	85	157	95	87	101	89	169	93	71	77
1 30	74	71	104	234	118	106	130	109	283	108	71	77
1 45	70	93	105	301	129	138	140	135	355	133	70	77
2 0	74	78	121	328	143	140	157	143	390	156	70	77
2 15	80	77	135	355	152	144	171	153	425	185	71	77
2 30	75	108	127	389	151	166	169	175	452	232	70	77
2 45	82	85	146	404	167	160	191	177	479	297	71	77
3 0	82	100	146	428	174	172	199	189	501	383	70	77
3 15	86	107	155	451	180	177	206	203	525	451	71	77
3 30	86	112	159	469	187	185	213	214	539	505	71	77
3 45	85	125	160	483	190	197	214	230	556	547	71	77
4 0	82	132	159	492	194	208	220	240	571	571	70	78
4 15	84	129	164	493	204	210	230	244	591	582	70	79
4 30	88	126	171	491	211	210	239	247	600	579	71	79
4 45	87	136	174	493	208	217	233	262	595	573	71	78
5 0	85	140	172	491	210	222	234	267	595	577	71	79
5 15	88	136	175	481	217	220	243	266	590	574	71	80
5 30	95	122	188	466	222	210	249	264	574	554	72	79
5 45	87	149	174	464	212	225	234	277	550	541	71	80
6 0	87	146	174	450	213	221	235	275	534	530	70	80
6 15	93	128	184	431	218	209	241	268	520	516	71	80
6 30	97	125	189	420	218	206	239	267	506	509	73	80
6 45	88	153	173	421	208	217	226	277	492	506	71	80
7 0	90	142	177	408	211	210	230	272	480	501	71	81
7 15	97	123	187	394	215	201	234	265	470	492	72	80
7 30	94	147	180	395	207	209	222	274	460	491	72	80
7 45	96	143	180	388	207	207	222	273	452	492	72	80
8 0	93	153	176	385	204	209	218	275	444	496	72	81
8 15	91	147	176	378	205	205	221	270	438	496	71	82
8 30	95	133	182	369	208	199	226	264	432	501	72	81
8 45	94	156	175	373	201	207	214	274	426	491	72	81
9 0	91	159	173	369	198	208	212	275	418	485	72	82
9 15	92	143	176	360	201	202	218	268	411	481	71	82
9 30	95	138	179	354	203	199	220	264	406	480	72	82
9 45	93	161	173	358	197	206	210	273	405	493	73	82
10 0	92	148	175	353	199	202	215	268	404	513	72	83
10 15	95	140	180	349	202	198	219	264	404	530	72	83
10 30	101	128	186	343	206	194	223	260	403	548	72	82
10 45	94	164	175	351	196	205	210	272	401	553	71	82
11 0	93	155	175	347	197	203	213	270	396	541	71	83
11 15	96	143	179	341	200	199	217	265	393	530	71	83
11 30	99	137	182	337	201	196	219	263	388	516	71	83
11 45	99	140	182	334	201	196	218	263	381	505	71	83
12 0	102	137	184	330	202	194	219	261	376	503	72	83
12 15	102	145	182	330	200	195	215	263	372	500	72	82
12 45	100	146	180	324	198	195	213	264	359	472	71	83

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TIME MIN SEC	C U B E										T E M P E R A T U R E S				E X P O S U R E	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60	CH61	CH62	CH63	CH64	CH65	CH66
13 0	101	146	100	321	197	194	212	263	355	456	72	82				
13 15	100	150	178	318	194	194	210	263	348	436	72	82				
13 31	99	154	175	315	192	195	207	264	342	419	72	83				
13 46	101	141	100	306	195	190	210	258	335	403	72	83				
14 1	101	144	177	302	192	191	200	258	329	391	72	82				
14 16	101	149	175	299	190	191	205	258	324	378	72	82				
14 31	97	157	170	299	186	193	199	261	317	372	72	82				
14 46	103	155	178	287	192	185	207	251	312	362	72	83				
15 1	102	146	174	286	188	187	202	253	307	352	71	82				
15 16	99	155	169	286	184	189	197	256	302	344	71	83				
15 31	97	152	168	282	182	188	195	255	297	338	71	83				
15 46	96	150	167	279	181	188	194	254	293	331	71	83				
16 1	99	137	170	272	183	184	198	248	288	325	71	83				
16 16	101	136	172	267	184	181	198	245	284	318	72	83				
16 31	102	141	170	266	182	182	195	246	280	311	72	82				
16 46	98	146	166	265	179	183	192	247	274	310	72	83				
17 1	100	135	169	259	181	180	195	243	269	306	72	83				
17 16	101	141	167	257	179	179	192	243	265	299	72	83				
17 31	101	140	166	255	178	179	191	242	261	292	72	82				
17 46	99	140	164	252	176	178	189	241	256	289	72	83				
18 1	101	134	166	247	177	175	190	237	253	283	72	83				
18 16	100	150	161	249	172	178	183	242	249	274	73	82				
18 31	96	154	156	248	167	180	178	244	245	268	72	82				
18 46	103	124	165	235	175	171	189	231	241	262	73	82				
19 1	101	143	161	236	170	173	182	235	238	255	73	81				
19 16	96	154	154	238	165	177	175	240	233	250	72	82				
19 31	94	143	153	233	164	174	176	235	229	245	71	82				
19 46	97	132	156	226	166	171	180	230	226	238	72	82				
20 1	97	129	156	222	166	169	180	227	223	232	71	82				
20 16	99	124	158	217	167	166	180	224	219	226	71	82				
20 46	94	137	152	214	161	167	173	225	212	216	71	82				
21 1	99	120	156	207	165	163	178	218	210	210	72	82				
21 16	102	125	156	204	164	162	175	218	207	203	74	81				
21 31	95	146	149	208	156	166	166	224	203	201	73	81				
21 46	99	117	154	198	163	159	174	213	201	197	74	82				
22 1	101	120	155	195	163	158	173	212	199	192	74	82				
22 16	99	138	151	197	157	161	166	217	196	189	73	82				
22 31	94	143	146	197	153	163	161	219	192	187	72	82				
22 46	100	123	151	188	158	157	167	210	192	181	73	81				
23 1	101	121	151	185	159	155	168	207	189	178	73	81				
23 16	99	131	149	186	154	157	162	210	187	175	73	81				
23 31	93	141	143	188	150	160	156	214	184	176	72	82				
23 46	98	139	140	187	149	160	155	213	182	174	72	82				
24 1	98	123	146	180	152	155	160	205	181	168	73	81				
24 16	97	129	145	179	151	155	157	206	179	167	72	82				
24 46	94	136	140	171	147	155	152	207	175	164	72	81				
25 1	98	120	145	171	150	150	158	199	174	161	73	81				
25 16	93	137	138	176	146	154	151	205	172	162	72	82				
25 31	90	111	145	166	150	149	159	193	171	159	72	82				

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TIME MIN SEC	C U B E T E M P E R A T U R E S										EXTOSUM CHAMBER	
	CH51	CH52	CH53	CH54	CH55	CH56	CH57	CH58	CH59	CH60		CH61
25 46	92	127	138	171	145	151	151	200	168	160	71	02
26 1	95	112	142	164	149	149	156	193	168	157	72	02
26 16	92	124	137	167	144	150	150	190	166	155	72	02
26 31	94	124	137	166	144	149	150	196	165	151	73	02
26 46	92	125	135	166	142	150	148	196	163	152	72	02
27 1	93	120	136	163	143	148	149	193	162	150	72	02
27 16	95	112	139	159	145	145	151	188	161	149	72	02
27 31	95	110	139	157	145	145	151	187	160	149	72	02
27 46	89	131	129	164	136	149	142	196	158	148	72	02
28 1	95	113	136	156	142	145	149	186	158	145	73	01
28 16	93	113	135	155	141	144	147	186	155	145	72	02
28 31	92	114	133	155	140	144	146	187	154	144	72	02
28 46	91	126	129	158	136	146	141	189	154	141	72	01
29 1	95	116	133	153	139	142	145	184	153	139	73	01
29 16	96	104	137	149	142	138	149	178	152	138	73	01
29 31	96	103	137	148	143	137	150	176	150	137	74	01
29 46	95	114	133	149	139	139	145	179	150	135	74	01
30 1	95	115	132	149	138	139	143	179	150	134	74	00
30 16	95	114	132	149	138	138	142	179	149	133	75	01
30 31	93	119	129	149	135	139	139	181	148	132	74	01
30 46	90	125	124	151	131	141	134	184	147	133	73	01
31 1	91	107	128	146	135	137	141	176	145	134	72	02
31 16	89	113	125	148	132	138	137	179	144	133	72	02
31 31	87	126	120	150	127	142	130	183	144	131	72	01
31 46	92	99	128	142	135	134	141	171	143	130	72	01
32 1	88	112	124	145	130	137	135	176	142	130	72	02
32 16	86	120	119	148	127	139	130	179	141	130	71	02
32 31	86	117	119	147	126	138	130	178	140	129	71	02
32 46	93	102	126	140	132	133	136	170	141	124	73	01
33 1	85	119	118	146	124	137	128	177	138	128	71	02
33 16	93	96	127	137	132	130	138	167	139	124	72	01
33 31	90	101	124	138	131	130	136	167	137	125	72	02
33 46	92	109	123	140	128	132	131	170	137	122	73	01
34 1	92	109	123	139	128	131	130	170	137	121	73	00
34 16	93	94	127	133	132	126	137	162	136	122	72	01
34 31	93	106	124	136	129	129	132	166	135	119	73	00
34 46	88	120	117	141	123	133	124	173	134	121	72	01
35 1	85	120	114	141	120	133	122	173	133	122	72	01
35 16	86	121	112	142	119	134	120	173	132	121	73	01
35 31	86	104	116	136	123	130	127	166	132	121	72	02
35 46	85	106	115	136	122	130	126	166	131	121	71	02
36 1	89	93	120	131	126	125	131	160	131	118	71	01
36 16	90	100	117	135	122	128	124	165	130	115	72	00
36 46	92	94	120	129	125	124	128	158	130	115	73	00
37 1	90	92	121	127	126	122	131	156	128	116	72	01
37 16	84	114	111	135	117	128	120	165	127	118	72	01
37 31	84	118	109	137	114	130	116	167	127	116	72	01

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16. Abstract <p>This study compares the performance of a series of seat cushion design constructions based on their heat and smoke release characteristics. Tests were conducted in a room size calorimeter instrumented for measuring weight loss, rate of heat release, smoke and volatile decomposition products and the cumulative energy release.</p> <p>Baseline data were obtained from burn tests conducted on commercial airline salvage seats as a comparison with more advanced seat designs.</p> <p>A toxicological assessment of smoke and fire gases involved the exposure of test animals and their biological responses ascertained. Relative toxicological hazards of the combustion gases are discussed based on the animal response studies and the analysis of the combustion gases.</p>			
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